PS
THE PREVENTIVE MAINTENANCE
MONTH
SEPTEMBER - OCTOBER 1952 NUMBER 9
HOW TO MEASURE HIGH ANGLE CANT
see page 386

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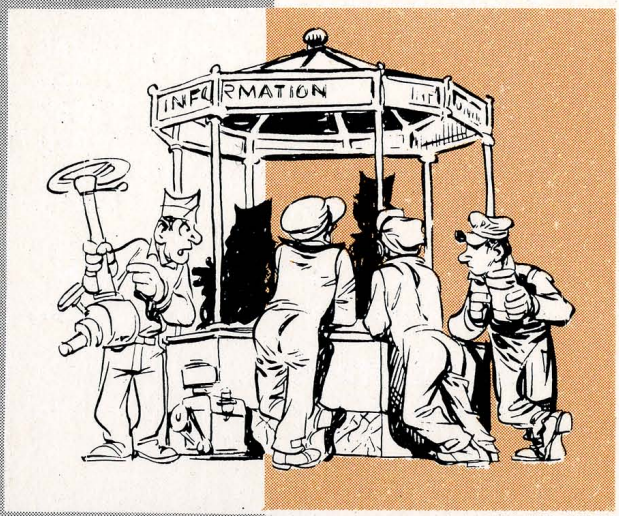

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To all such, attention is respectfully invited to page 2 of issue Number One. It tells all, and in the proverbial nutshell. Sweets for the sweet, so to speak. Except one thing that seems to bother you every so often and makes PS quite sad. You poke your loaded pencil in our general direction and you say to us, ". . . and just how official is PS ? ? ? ?"

Well sir, PS fires right back—PS is official as they come. With a capital "Oh." It's not what you'd call a **directive,** but everything it says to you is as checked and double-checked as technical facts should be. Everything in PS is approved by the **technical** authorities who approve those same facts for the directives that come later—and publication in PS constitutes **official** approval.

Besides, friend, the men who know the IG best can tell you that nobody ever got a gig for adapting PS information to local conditions. If it's good facts and it works to practical advantage, then by all means let your common sense be your guide and more power to you.

You may, occasionally get blessed, but you'll not get blistered. Just tell them you saw it in PS.

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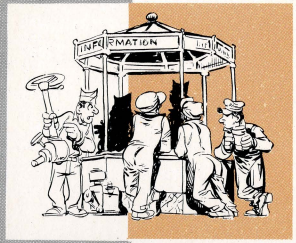

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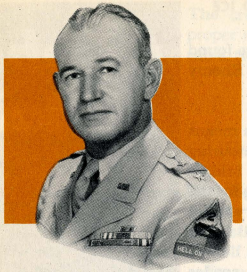

Preventive Maintenance... A Command Responsibility

"Preventive Maintenance is not a modern invention. Commanders have always been charged with insuring that all elements of their commands, human and material, be ready and able to accomplish an assigned task. This can be done in only one way—by everlasting interest of every member of the chain of command—in short, by recognizing that maintenance is not the job of the technician, important as he may be, but the job of the commander. PM is a command responsibility."

Major General I. D. White
Commanding 10th Corps

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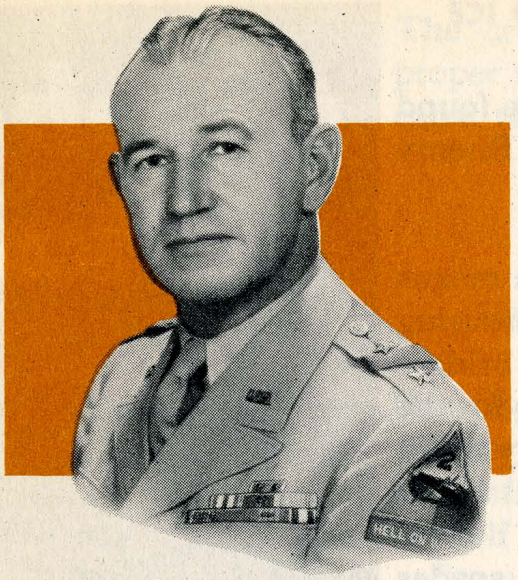

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FAR EAST ENEMY NO. 2—MUD AND ICE

Dear Editor,

So far as artillery is concerned, we've found only one way to combat mud and ice, Enemy No. 2 in the Far East. With **grease.**

Elbow grease and lubrication.

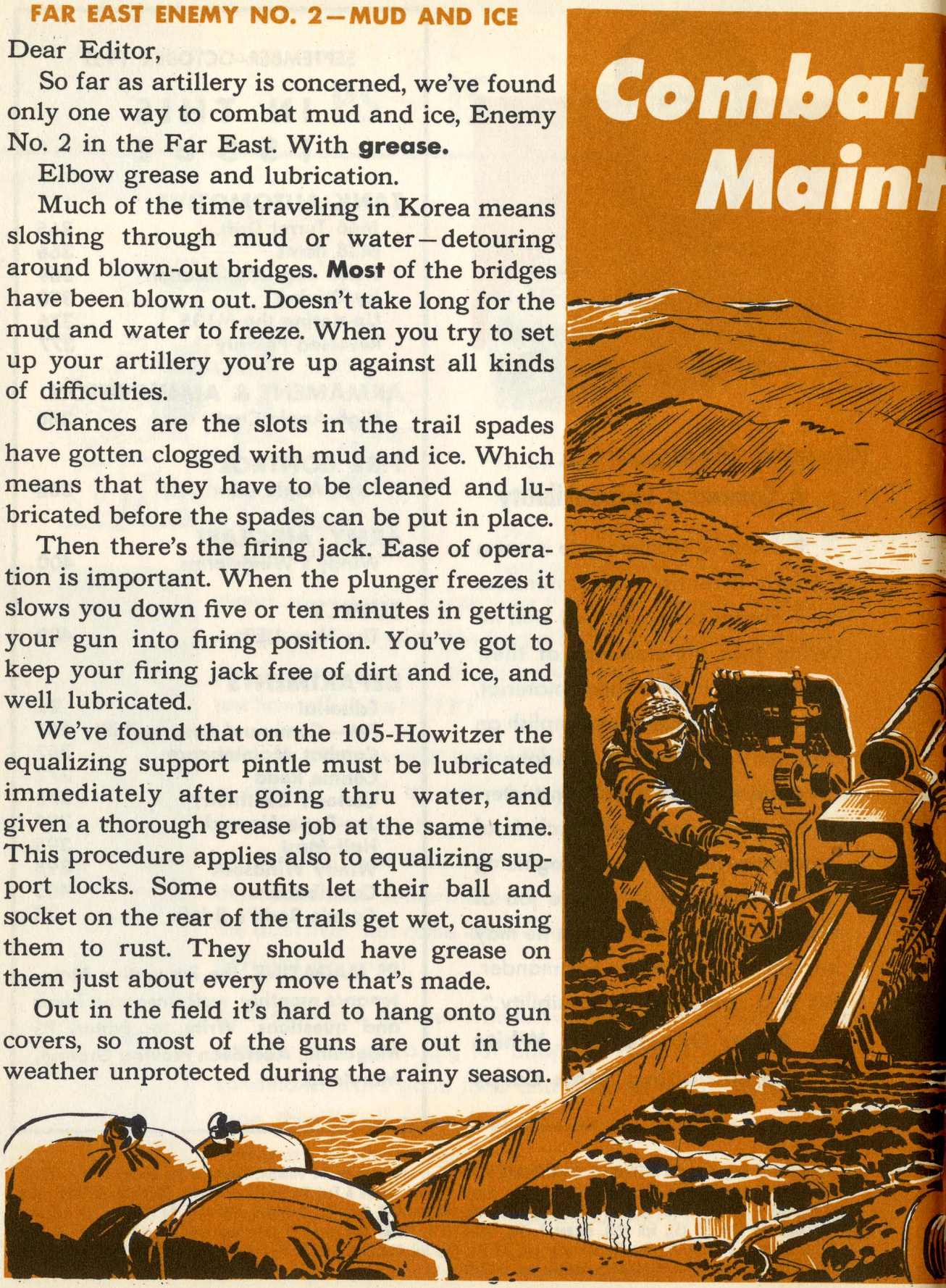
Much of the time traveling in Korea means sloshing through mud or water—detouring around blown-out bridges. **Most** of the bridges have been blown out. Doesn't take long for the mud and water to freeze. When you try to set up your artillery you're up against all kinds of difficulties.

Chances are the slots in the trail spades have gotten clogged with mud and ice. Which means that they have to be cleaned and lubricated before the spades can be put in place.

Then there's the firing jack. Ease of operation is important. When the plunger freezes it slows you down five or ten minutes in getting your gun into firing position. You've got to keep your firing jack free of dirt and ice, and well lubricated.

We've found that on the 105-Howitzer the equalizing support pintle must be lubricated immediately after going thru water, and given a thorough grease job at the same time. This procedure applies also to equalizing support locks. Some outfits let their ball and socket on the rear of the trails get wet, causing them to rust. They should have grease on them just about every move that's made.

Out in the field it's hard to hang onto gun covers, so most of the guns are out in the weather unprotected during the rainy season.



Combat Maintenance Stories

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Out in the field it's hard to hang onto gun covers, so most of the guns are out in the weather unprotected during the rainy season. The cradle slides rust and won't give the proper recoil. The whole gun should be lubricated two or three times a week.

Sgt Ray J. Godsey
Korea

TRUTH IS STRANGER THAN FICTION —CHANGE YOUR FLATS

Dear Editor,

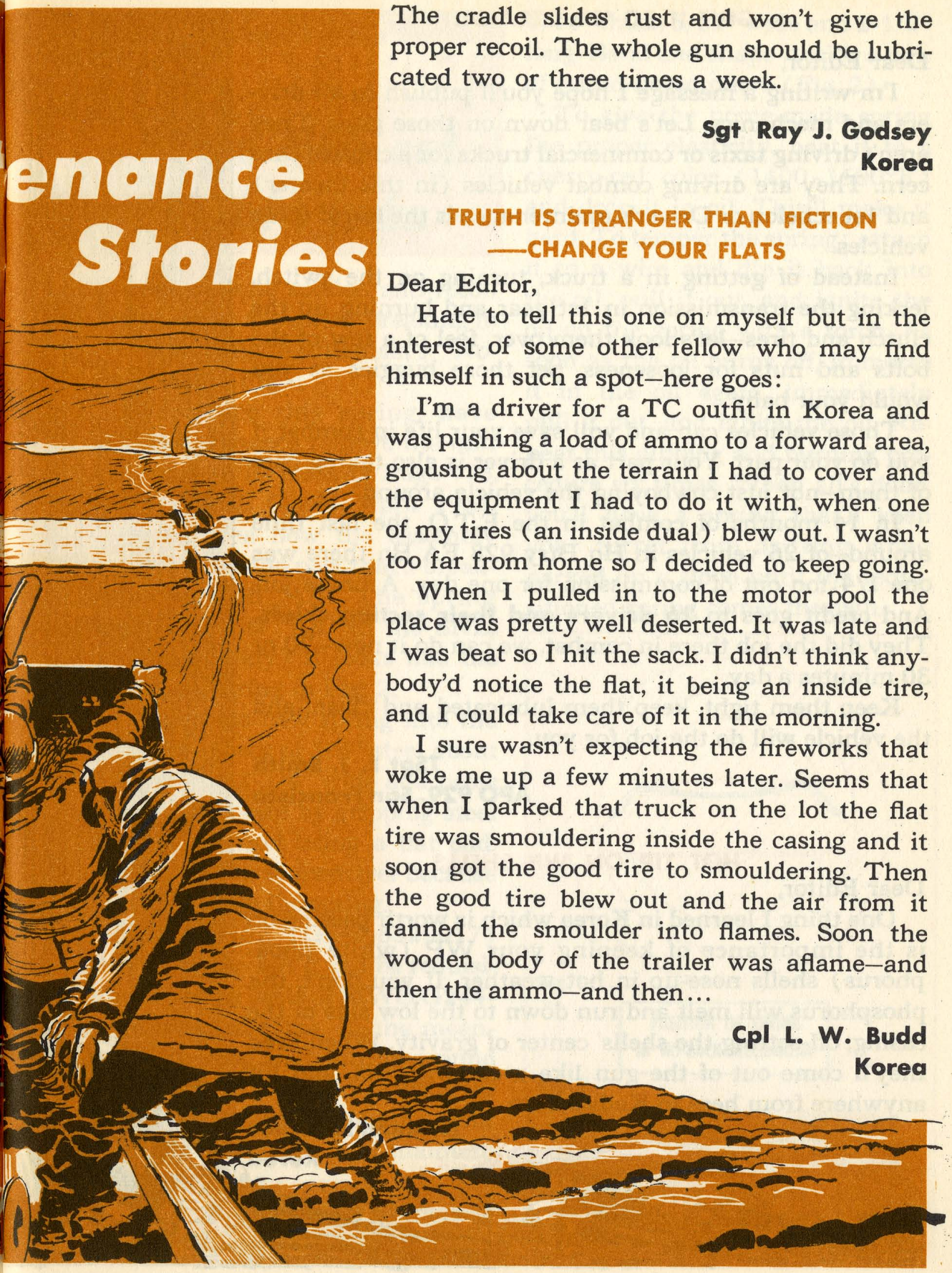
Hate to tell this one on myself but in the interest of some other fellow who may find himself in such a spot—here goes:

I'm a driver for a TC outfit in Korea and was pushing a load of ammo to a forward area, grousing about the terrain I had to cover and the equipment I had to do it with, when one of my tires (an inside dual) blew out. I wasn't too far from home so I decided to keep going.

When I pulled in to the motor pool the place was pretty well deserted. It was late and I was beat so I hit the sack. I didn't think anybody'd notice the flat, it being an inside tire, and I could take care of it in the morning.

I sure wasn't expecting the fireworks that woke me up a few minutes later. Seems that when I parked that truck on the lot the flat tire was smouldering inside the casing and it soon got the good tire to smouldering. Then the good tire blew out and the air from it fanned the smoulder into flames. Soon the wooden body of the trailer was aflame—and then the ammo—and then...

Cpl L. W. Budd
Korea



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Cpl L. W. Budd
Korea

GIVE IT TO 'EM STRAIGHT

Dear Editor,

I'm writing a message I hope you'll publish to all drivers and mechanics. Let's bear down on those guys. They aren't driving taxis or commercial trucks for a civilian concern. They are driving combat vehicles (in this theater) and 1st echelon or Driver's maintenance **is** the life of those vehicles.

Instead of getting in a truck, turning on the switch, jerking the transmission in 1st gear and burning up the clutch and tires—let's look them over, feel of a few of the bolts and nuts for looseness, pet those buggies as you would your baby.

Those vehicles can and will save your life in combat if you do your part. Your part as a driver is also taking care of them—not just cowboying the vehicle around.

In 14 months of combat in the E.T.O. the last time around—of 26 vehicles in Hq Btry 928 FA Bn there was one 1/4-ton out of commission for one day. A brake job. And credit goes to **26 drivers and their section chiefs.** They did the job there in combat, we can do it now—20 or 30 minutes a day.

Keep them tight, keep them lubricated and clean, and the vehicle will do the job for you.

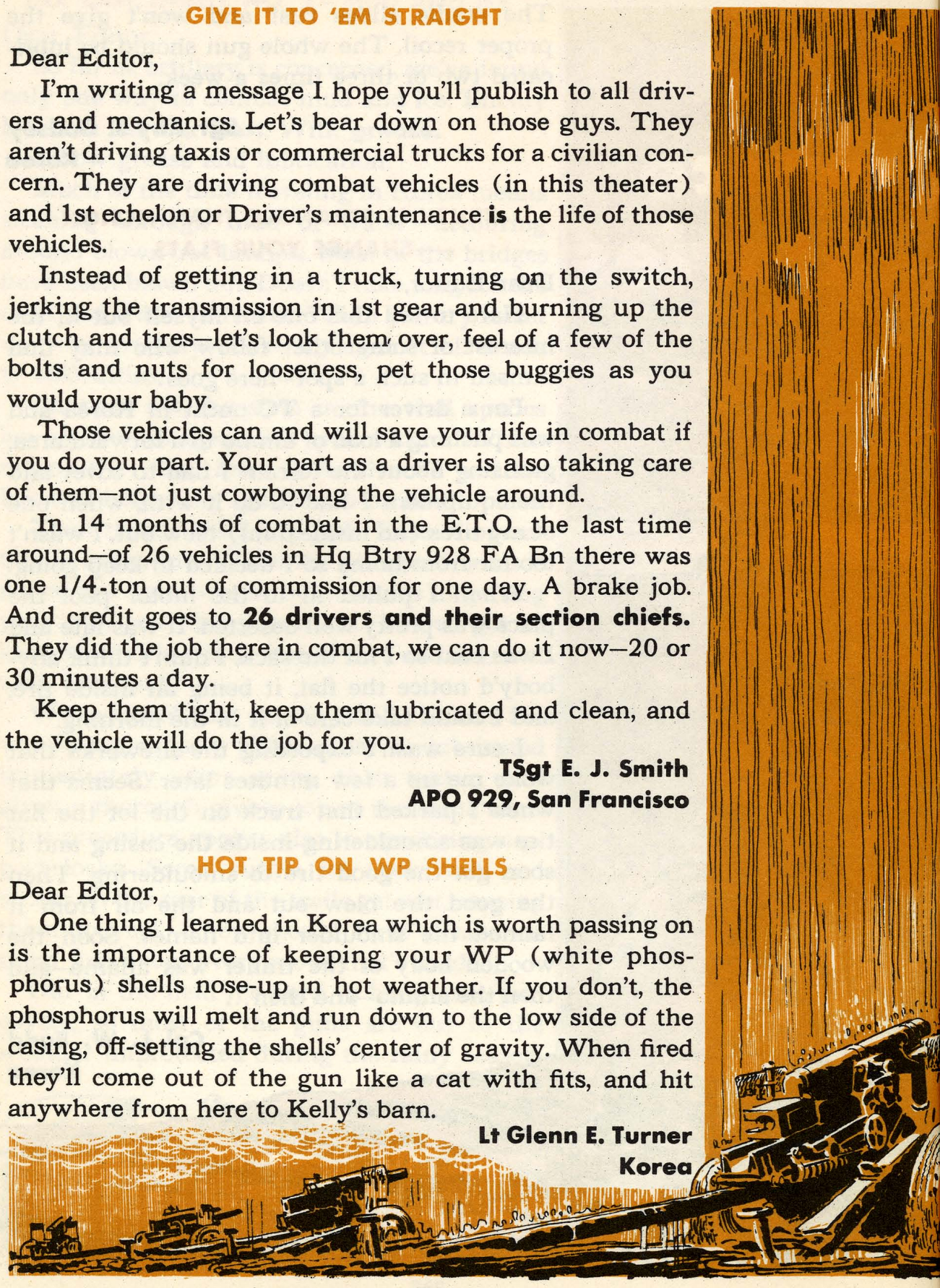
TSgt E. J. Smith
APO 929, San Francisco

HOT TIP ON WP SHELLS

Dear Editor,

One thing I learned in Korea which is worth passing on is the importance of keeping your WP (white phosphorus) shells nose-up in hot weather. If you don't, the phosphorus will melt and run down to the low side of the casing, off-setting the shells' center of gravity. When fired they'll come out of the gun like a cat with fits, and hit anywhere from here to Kelly's barn.

Lt Glenn E. Turner
Korea



TURRET DRIFT on the M46 and M46A1 tanks

Tankers blame sudden anti-recoil failures on the spring breaking in the traversing mechanism's "No-Back" unit (Fig. 1).

To replace this spring, have field maintenance remove the unit and take out its innards. Page 475, ORD 9 SNL G-244, April 1951, gives an idea how the assembly comes apart—the part that's breaking is labeled "AA". The spring could look like "AA" in the SNL, or (more likely) it looks like the later-type spring in Fig. 2.

To depress new spring into the unit, get a piece of 1/4" steel about 6" long and 1-3/4" wide and press spring into place by gripping steel in your fist and using a flat end. Avoid pliers or screwdriver because they'll damage the spring.

The spring (G244-8329017) isn't in stock—but it can be requisitioned on the basis of MWO G244-W28, soon to come. In the meanwhile, to keep from sitting around in a turret-drifting tank waiting for a spring to come through — your best bet is to have field maintenance make one.

Get a small piece of spring metal, preheat, cut and file it till it's 1/16" thick, 5/32" wide and 2-1/2" long. Bend and shape it with a pair of round-nosed pliers (Fig. 2).

To give the home-made spring the proper elasticity, heat it to a cherry-red color (1400-1600°F) and drop it in oil. This'll make it hard. To temper the spring: attach it to a wire and dip it back into the oil, pull it out, and ignite the oil on the spring with a torch. As soon as the oil burns off, immerse it in the oil again, immediately pull it out, and ignite the oil. Repeat this dipping and burning procedure six times. When all's done, you'll have a spring that'll keep your turret from drifting when parked on a slope until the requisitioned spring comes through.

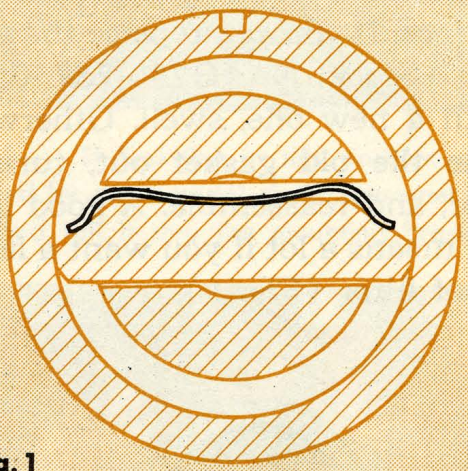


Fig. 1

POSITION OF SPRING IN NO-BACK MECHANISM

Fig. 2

SHAPE OF SPRING USED IN THE NO-BACK ASSEMBLY

The more attention she gets,
The less trouble she gives.

your M38 feelin' great?

LEAKY CUNO FILTER

M38 Cuno type oil filters give little trouble but they need some attention to keep them working right. Besides the usual cleaning, after two or three thousand miles of operation they sometimes start leaking and require extra care.

The reason for this leak may be that in manufacture the cup flange (the sealing surface) is left unmachined and rough. As a remedy, smooth down the flange on a piece of abrasive cloth resting on a flat surface. If you can replace the gasket (Stock No. G740-7375059) with a new one, swell. Otherwise take the old gasket out, turn it over, and reassemble. A good gasket means a lot if you want a leak-proof filter (Fig. 1).

This idea can also be used to keep fuel pump sediment-cups in trim if they go astray.

THROTTLE WIRE BREAK

There's been some complaint of M38 throttle wires breaking off where they're stacked inside the ratchet tube of the hand throttle. This tube should be lubricated regularly but it's often forgotten.

Needing a little oil, the ratchet tube gets stuck. Next thing you know, you pull extra hard—the handle comes out with a jerk, and the wire is broken. This can be uncomfortable if it happens while fording. If preferred, graphite can be used in place of oil. In any event—it's a part you should be able to move, so why not keep it movable?

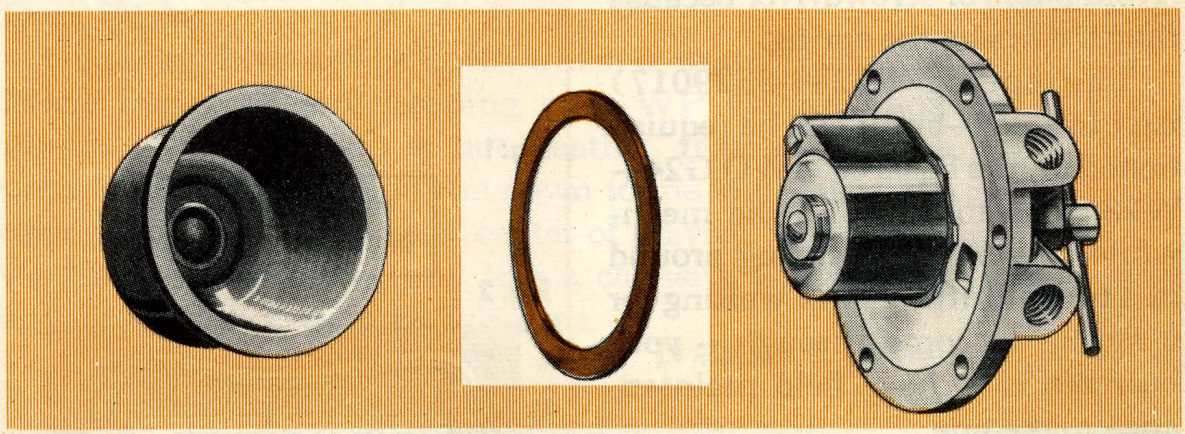


Fig. 1—Not only do you need a good gasket for a leak-proof Cuno filter, you also need a smooth sealing-surface on the cup flange. And remember to tighten the bolts evenly, all the way around, when you reassemble the filter—uneven tightening makes for leaks, as you know.

BUCKLED DIFFERENTIAL COVER

Removing and replacing the front or rear differential cover a few times can give it a permanent buckle. The stuff the cover's made of isn't tough enough to keep its shape when there's been uneven pressure against it. And that means GO leaks down-under.

Using a thin cork gasket and a soft sealer, like aviation Permatex #3, can help at this point. Or, try cutting a ring from some mild steel to fit the circumference of the cover, drill holes for the cap screws, and weld it to the outside of the cover. Add a softer and thicker gasket to this and you're set.

But most important, it's best if you make the cover tight without buckling. To get an even tightness on the housing, put all the screws on finger-tight first. Then working clockwise, give each screw a quarter turn at a time until they all have a proper and equal snugness.

Incidentally, if you're raising an M38 with a roll-away floor jack, be careful. A light smack from the jack can crack the differential cover.

FUEL LINE MOVE

The bottom of your clutch pedal may be nibbling at your fuel line everytime your left foot lams down on top of it. In fact on some vehicles the brass tee-fitting at the fuel-line shut-off-valve has been cracked by the pedal being too close and slamming it too hard. If the situation there looks threatening, you can move the line safely away from the bottom pedal clevis, according to a coupl'a users who've written PS about the change.

Their idea is to put a hole in the front body-mounting bracket directly in line with the fuel line and run it through this hole. (Fig. 2 and Fig. 3). That way, the bracket acts as a bundling-board and keeps the line and pedal clevis away from each other's nudging.

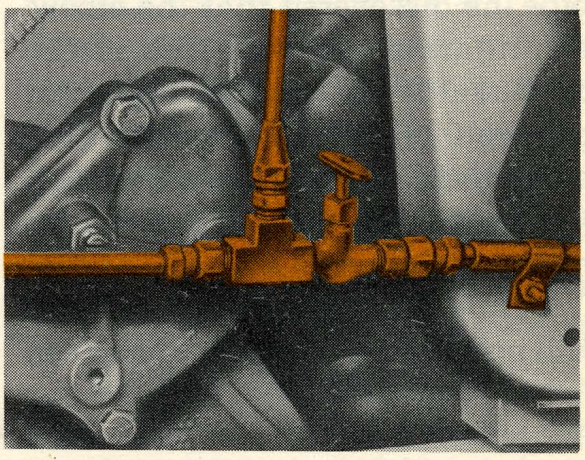


Fig. 2 — If fuel line in this position gets banged by clutch-pedal clevis, grommet the line and run it thru the mounting bracket.

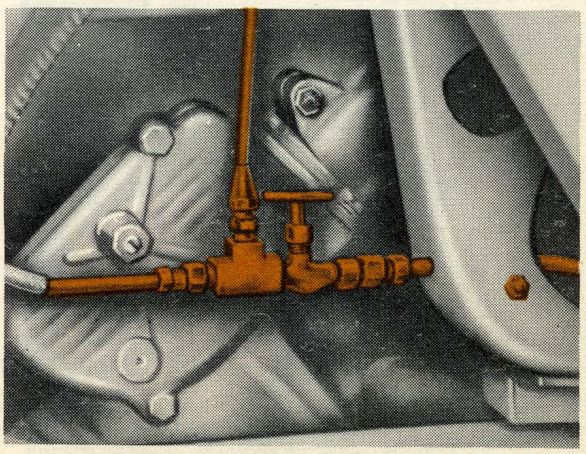


Fig. 3—After you've drilled a hole in the bracket and run the line thru, clip the line on the other side using the same bolt hole.

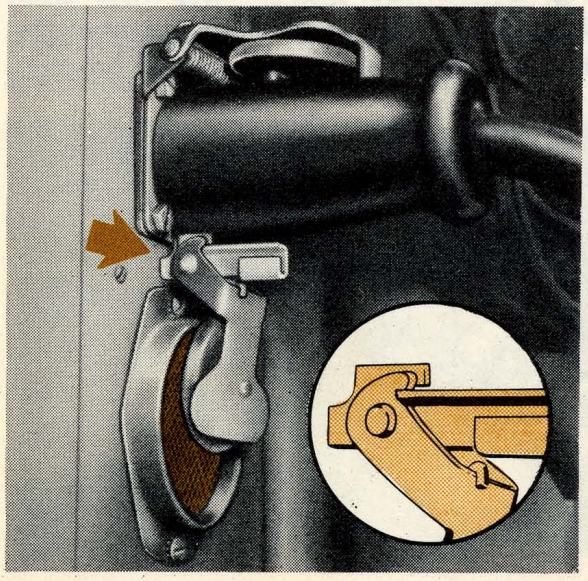
VACUUM IN DISTRIBUTOR

When an M38 started to miss and backfire, **Ed Hinsdale,** OCT at Camp Stewart, Georgia, found that disconnecting the tube between the vacuum booster and windshield wiper made the little giant purr like a kitten. Reconnecting the hose and tracing the vent line through the distributor and into the carburetor-air-intake pipe, he discovered that the elbow, terminating the vent line in the carburetor-air-intake pipe, got plugged with brass somewhere along the production line. By clearing the brass-clogged passage he made everything OK.

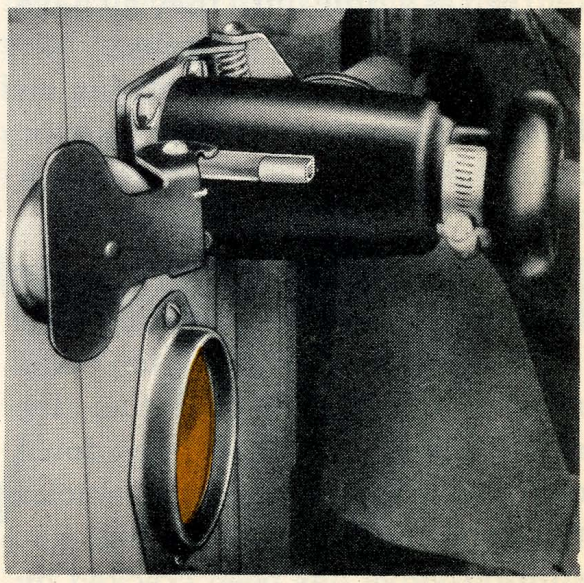
While scratching around, **MSgt Hill** noticed that the spark had been weaker and returned to normal after the vacuum line was disconnected. That figures, since air becomes a better conductor of electricity as pressure is reduced. The partial vacuum accidentally set-up in the distributor made an easy air path for ignition current to reach ground inside the distributor case, short circuiting the spark plugs. While it won't happen in all vehicles, a job with a booster (like that on the M38) creates enough of a vacuum to make the difference. And from the positive side, this is a good way to test the sealing, venting, and waterproofing of the distributor. When everything else is fit and snug, and all the vent connections tight, disconnect the top vent-line, cap it with your finger, and the engine should start to miss.

TRAILER-CABLE SOCKET-COVER FIXES

Two ways to keep trailer-cable socket-covers from scratching or breaking reflectors



An unlocked socket-cover does the damage. If you grind 3/16" from the lock's upper corner, it will be free for good locking action.



Or if the lock's broken, turn the M38's receptacle so it opens from the side, and plug the socket in sideways, too—reflector clear.

TRACK-JACK MODIFICATION

Dear Editor,

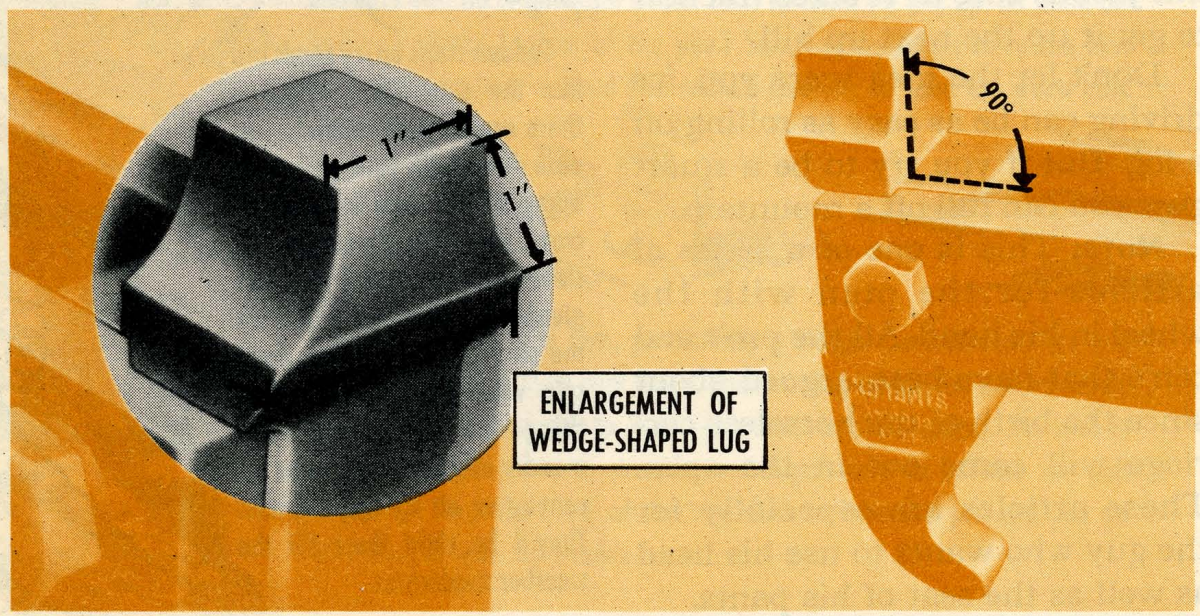
If any of your readers are plagued by the soft-headed end-connector-puller pin snapping off their M4, M26, M46, M46A1 and M47 track-jacks (oh, my aching knuckles), they'll want to hear how we went about reclassifying our jacks from **blasted** to **blessed.** We modified the jack's pin (41-F-2995-200) so it would stand up and do the rugged job of pulling off the end-connectors from most center-guide chevron-type tracks.

Our fix: cut off the puller-pin, and in its place weld a wedge-shaped lug that's the general size and shape of a drive-sprocket tooth. The lug (cut from a piece of armor plate) is 2″ long, 1-3/8″ wide, and 1″ high. Cut and shape both ends so the lug will fit into the connector's wedge-bolt recess and clear the track-pins. Then weld this wedge-shape lug onto the overall surface of the track's puller-pin mount. Mount the lug so its pulling surface is a perfect 90° from the jack's body, as shown below.

When using this modified jack-pin, reverse it from the usual position, insert the lug into the end-connector's wedge-recess and pull away—it won't slip or break and the connector comes off neat 'n easy. Requisitioning new fixtures because of a broken or buggered puller-pin is a thing of the past in our outfit.

SFC A. H. Steele
APG, Maryland

(Ed Note—Sounds OK, but get a good weld on that lug. Your fix can also be used on the M24 track-jacks (Fixture 41-F-2997-86) by making the lug a little smaller.)



The head behind the feet
Keeps a truck safe on ice.

ICY DRIVING

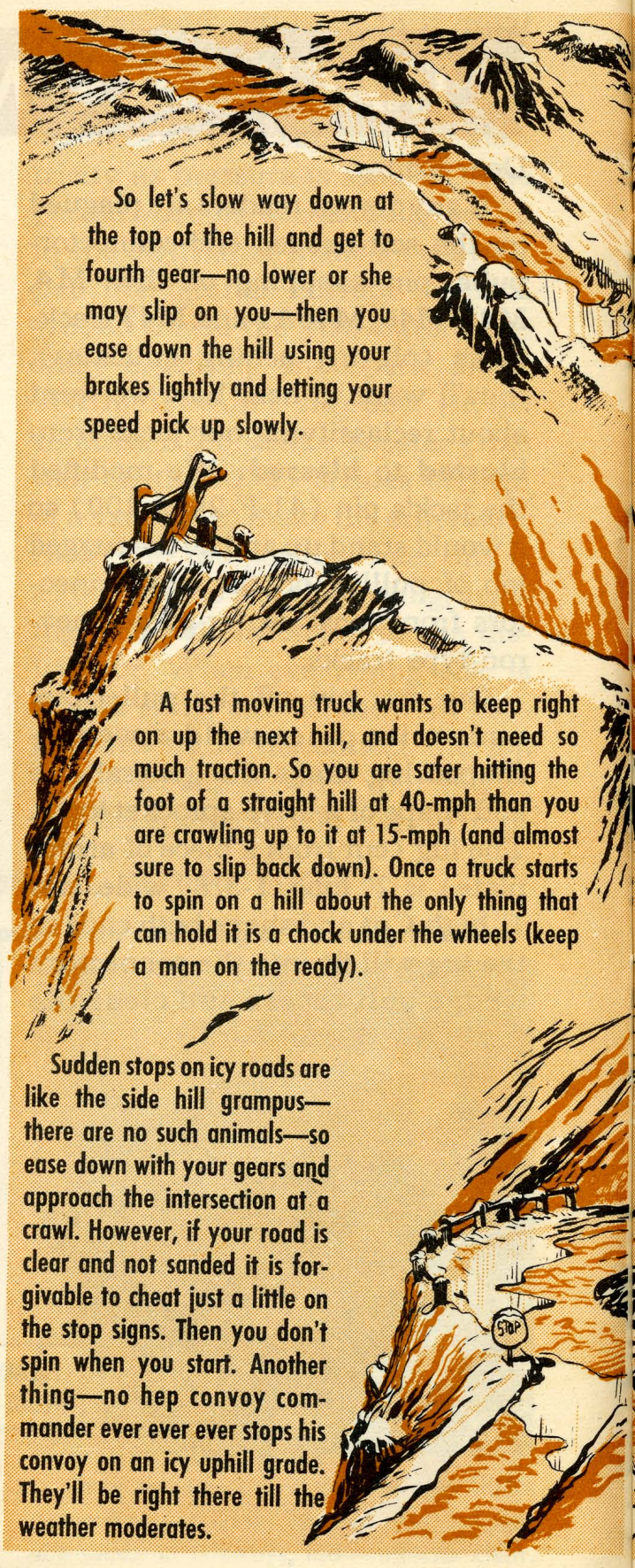
WHAT makes ice-driving dangerous? More often than not it's the driver—doing the wrong things at the wrong times and for the wrong reasons. People who have never thought it out are fond of saying, "Ice?—let's all go 15-mph and we'll be safe!"

This is not so. Too little speed on ice, in the wrong places, can be as deadly as too much.

Slippery roads mean less grip of your tires on the road—much less traction to depend on. You need to learn to get along with as little traction as you can. And it takes traction to hold a heavy truck on a down hill just as sure as it takes traction to get it up the next up hill.

Don't let the idea scare you, ice driving can be as easy as rolling off a log. But if you try to be a smart guy, you can roll off a mountain.

Note: This is one of a series of articles for the man with the wheel in his hand. All the pro's and con's that have been argued about since the birth of the horseless carriage will come out in the open. These articles are especially for the guy who wants to use his head as well as the seat of his pants.



The head behind the feet
Keeps a truck safe on ice.

ICY DRIVING

WHAT makes ice-driving dangerous? More often than not it's the driver—doing the wrong things at the wrong times and for the wrong reasons. People who have never thought it out are fond of saying, "Ice?—let's all go 15-mph and we'll be safe!"

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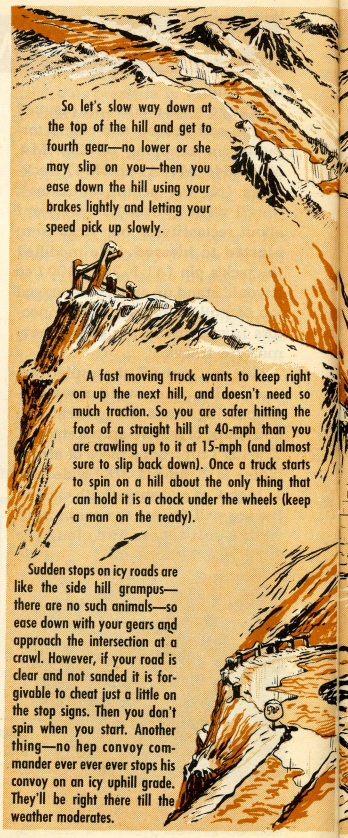

So let's slow way down at the top of the hill and get to fourth gear—no lower or she may slip on you—then you ease down the hill using your brakes lightly and letting your speed pick up slowly.

A fast moving truck wants to keep right on up the next hill, and doesn't need so much traction. So you are safer hitting the foot of a straight hill at 40-mph than you are crawling up to it at 15-mph (and almost sure to slip back down). Once a truck starts to spin on a hill about the only thing that can hold it is a chock under the wheels (keep a man on the ready).

Sudden stops on icy roads are like the side hill grampus—there are no such animals—so ease down with your gears and approach the intersection at a crawl. However, if your road is clear and not sanded it is forgivable to cheat just a little on the stop signs. Then you don't spin when you start. Another thing—no hep convoy commander ever ever ever stops his convoy on an icy uphill grade. They'll be right there till the weather moderates.

When you get around the last curve and see the road straight before you, drop her into top gear.

If there is another hill going up right ahead of you, stand on your gas. The more speed you have at the foot of the hill, the less traction you need to get over the top. Going-up—if it is not too steep a hill—use only enough power to get you over the top, let your speed fall off as you go up so that you are well under control again when you reach the top.

On a level road with a hill coming up, get up speed enough to help you make it. Don't leave the whole job up to your tires. Speed itself rarely makes you skid or slip. Trouble starts when you try to turn or stop your fast moving truck without enough traction to take care of the forces involved. An object wants to keep going the way it is going and it takes force to stop it or change its direction. With your truck, this force comes only from the grip your tires have on the ground, and they haven't much grip on ice. You've got to commence stopping a long time before you want to be stopped.

Should you happen to be in charge of a convoy over icy hills, be sure your men take sufficient interval so that one truck is safely over the hill ahead before the next one starts down. When leading trucks down such hills, remember that a frantic air horn in your ear means a runaway and **all** you do is get from under, fast! (If there's a pile up, let them not find you at the bottom of the pile.) Smart commanders have the lead truck carry cinders, or sand and sodium chloride, to sand the worst hills.

Now let's look at a turn, particularly a steeply banked turn. We will have a tendency to slow way down when turning on ice, but unfortunately that gives us a tendency to slide right down into the center. The trick is to keep enough speed to provide centrifugal force to balance the pull of gravity. Then the bank of the turn does its intended job and you go right around with no trouble.

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Wildman, spare that tank!

To my everlasting sorrow, the newsreel boys found out way back at the start of the late great fuss that the public just loved to see Jeeps flying through the air, and tanks tearing madly along like berserk bulldozers. So they showed 'em and showed 'em and showed 'em.

Well, as pictures, they're fine. But you guys who are playing for real realize that they show what a military machine **can** do when it **has** to, not what it should do in everyday use. Tank men are not flyboys—and for their own good reasons.

Say you weigh your medium tank, and divide the weight by the number of road wheels. It comes out about four-tons per wheel. But this figure applies only to a tank standing still on the level. When climbing out of a ditch or over a sharp ridge, you can have **all 45-tons** of tank on one or two pairs of rollers. This is called "Weight Transference" and is a bogey man to the bogies. I kid you not.

Likewise, traveling at a good careless clip, you could hit a rock with a twenty-ton blow. The rock can take it, but how about your track?

To avoid a sudden change to walking, less armor, bear this in mind: Always be as gentle with your brute as you possibly can, whenever and wherever you can. Then when you **have** to bug out, you can go full blast with some hope that Betsy'll hold together till you get out. If you beat the old girl to death right along, for the fun of it, she may lie down like a foundered mule when you need her most, leaving you with your tail in a crack. It's like the oldest living tanker says, "Now where I come from, they're not shooting for camera angles." SO-O-O . . .

Ease up at the crest of a hill

Avoid the rocks, and leave the trees grow
Go the easy way 'round when you can
Only hurry when you **gotta** *go*
Climb out of ditches slowly
Stay off the sides of hills unless you **must** *use 'em*

Winch works

They're thinking of putting up a sign that says **"Caution"** right next to the drag-brake adjusting screw on your M34 and M44 winch drag-brake. What the plate will caution you about is that this here screw is an **adjusting** screw and not a tightening screw. It's like so:

When testing the winch, you pull the cable off the drum with your clutch disengaged, and if your drum keeps on turning after you've stopped pulling, you need an adjustment. So you turn the adjusting screw clockwise until it has enough drag to stop the drum when the pull is stopped.

Towing hint

All 2-1/2-ton M34-series vehicles, manufacturer's serial number 90475 or above, have the double-sprag arrangement overrunning clutch. In towing or moving these vehicles the transmission must be in reverse to insure free movement of the vehicle backward, even though the transfer case is in neutral. Of course, a neutral or any forward-speed transmission position is satisfactory for forward movement or towing.

There is no free backward movement possible with the single-sprag unit (prior to manufacturer's serial number 90475) unless a propeller shaft is removed. (Always jack up one wheel clear of ground on each axle to relieve torsional strain before disconnecting propeller shafts.) These single-sprag unit M34's are in the process of being modified into double-sprag units, so check your clutch before hauling out a prop shaft.

The important thing to remember is that even with the double-sprag clutch, you can't tow the M34's backwards unless the transmission's in reverse.

Leave the seal on the voltage regulator

Some Joes never learn, and worse, they can't be taught. This could not include you, of course—but we keep running across people who insist that their generator regulators are snafu just because the ammeter falls back to two or three amps charge after they drive a few miles. This is unlearned but not serious. What gives Connie ulcers is when these boys tear into their regulators and try to fix 'em.

Believe me, when your ammeter shows a high charging rate for a few miles after starting and then falls back to two or three amps, it's money in the bank. It means that you have paid back the battery-charge you borrowed to start the engine and are once again the proud possessor of a full battery. If the ammeter shows **continued** high charge for all day, or if it shows no charge at all, then, and only then, take it to the boss electrician. If you are not personally a junior Edison, believe your gal Connie: **Voltage regulators cannot**

be adjusted right unless you have the right meters—and the education. Puh-leez—leave the seal on the voltage regulator.

Waukesha motor

Calling all agencies operating Waukesha Motor Model No. 140GKB. You need to add a word or two to the Southern Coach Company's Maintenance Manual, under Lubrication Group 16, Page 1, Item 27; and Operator's Manual, Page 16, Item 27, where it says that the Waukesha Motor Model No. 140GKB crankcase capacity is 13 quarts.

Seems the oil capacity of the engine crankcase is 13 quarts, all right enough —but after oil filters and lines get installed by Southern Coach, the capacity is 20 quarts. Therefore, when draining the oil from the crankcase only, the required amount for refill is 13 quarts. If the filters and lines are also drained, the required amount for refill is 20 quarts. The visual gage on the crankcase and the dipstick are correctly calibrated for 20 quarts.

Open fording valves

When the sign reads "Wet Paint" we get that urge to sneak our finger over and see if it's true. That same urge vamps drivers into pulling out fording-valve control-handles when it isn't necessary. This can end up hurting.

When the handle is pushed back, the control cables often bend without opening the valves all the way. With the vents only partly open, pressure builds up in the crankcase. Then you've got your hands full with oil leaks all over the place.

As a help, try reducing the amount of wire coming out of the wire housing. Also, clamp the wire housing closer to the valve and apply a light lubricant to the wires. A little graphite on the valves wouldn't be bad either.

But to make sure, whenever these valves are closed and reopened, raise the engine hood and check to see if they're open all the way.

Piston breakage

It seems that a number of 2½-ton Reo 6x6 M34's are suffering broken piston skirts. The break occurs at the bottom, or oil-wiper-ring groove. Since this is below the wristpin boss, the break is often not detected for some time. When changing oil on these trucks, you'd be smart to look closely for fragments of ring or piston in the oil. Run a finger up into the drain hole and feel around for scrap metal. If you find any, pull the pan and check the pistons with a light, with particular attention to #2 and #5. If there **is** a bob-tailed piston, be sure that a UER is sent forward by the unit motor officer, giving the engine number, the vehicle number, and preferably accompanied by the "O" ring or seal ring from the damaged cylinder.

Cleaning batteries

The question of washing batteries with a solution of bicarbonate of soda is still in the wind. So-o-o, here comes the caution again—unless it's used carefully, some of the stuff may seep into the battery and neutralize the electrolyte. **Bicarbonate of soda will neu-**

tralize acid. It may do a quick cleaning job but it's dangerous.

Some fellows use it just to wash the caps—while the caps are off the battery. They clean the vents and follow thru with a thorough water rinse before replacing the caps. The recommended way is a thorough cleansing **with water only.**

It's important to keep those vents in the caps clean. If the vent-valves stick, the battery will gas heavily and force the valves open. This pressure forces the acid out thru the caps then onto the battery case and the battery carrier, causing deterioration.

But clean vents, or otherwise, you're smarter to keep the electrolyte at the right level—and definitely not overfilled.

Southern coach

The Air Corps inherited most of these 37 passenger 4x2 Southern Coaches—but whether they're at an Air Base or no, it'd be a good idea to check the air-brake hose at the front and rear wheels. It seems that at the rear wheels especially, the hose rubs against the shock absorbers (Fig. 1).

If the hose gets sliced open, it's naturally not a healthy situation. To keep the hose at a safer distance from the shock absorber takes only a couple of 90° street elbows, 1/4″ pipe thread (Bendix Part No. 213671 or equal). Install the elbows as extensions (Fig. 1) and point them straight up. If the old hose (Bendix Part No. 205888 Air Hose Assembly, 2′ 2″ length) isn't real worn, just connect it to the elbows. Then relocate the slack-control spring—move it farther up in the wheelhouse so you'll have about 3-1/2″ of clearance between the shock absorber and the air hose.

In case the hose is already shot, get a shorter replacement (Bendix Part No. 215629 Air Hose Assembly, 1′10-1/2″ length). With this shorter hose, you won't need the slack-control spring at all (Fig. 2). And instead of pointing the top elbow straight up, leave it in a horizontal position, pointing left.

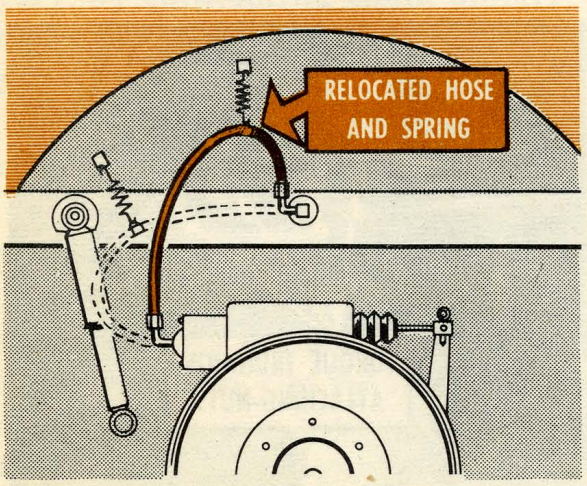


Fig. 1—In its old position, the air-brake hose got rubbed raw on the shocks, so avoid a tragedy—add two elbows and move the hose.

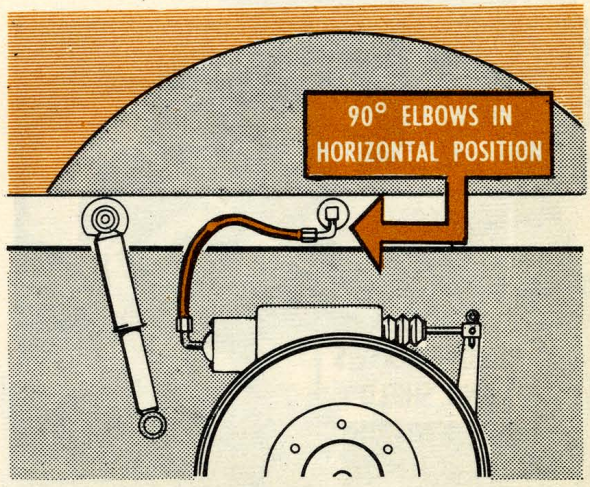


Fig. 2—If the hose is already shot, get a shorter replacement. You still need to add the elbows, but you can eliminate the spring.

Get Up To Date On Your

M135

AIR-HOSE COUPLINGS

From **SFC William Greenwalt, Camp Stewart, Georgia,** comes a good twist on air-hose couplings. They had trouble installing air-brake hoses on the M135's because the couplings are too close to the cargo body. By turning the couplings 15-deg. toward the outside of the vehicle they could hook up the trailer lines without any trouble.

ROCKER-ARM NUTS

The adjusting-screw jam-nut on #6 exhaust valve of your M135 may be hard to get at but tighten it, **you must.** If it's left loose the clearance adjusting-screw will back off—you'll have too much clearance—and the push rod may slip out of place. Then the rod can get bent, jammed, or jump out of the cam follower.

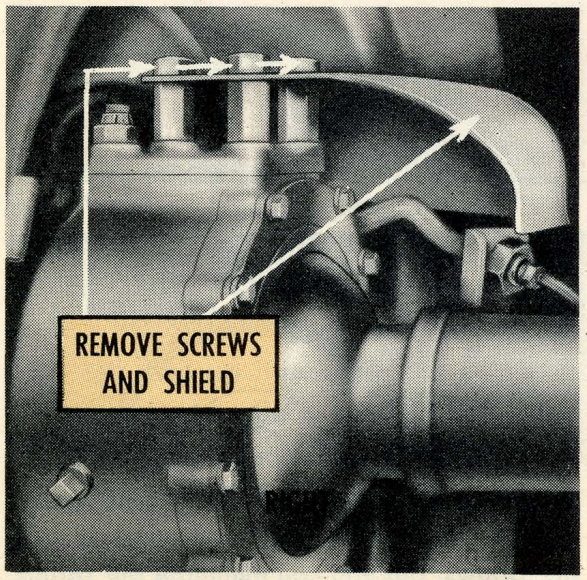
New push rods may be harder to get at than that elusive nut. So-o-o, tighten the nut and spare the rod.

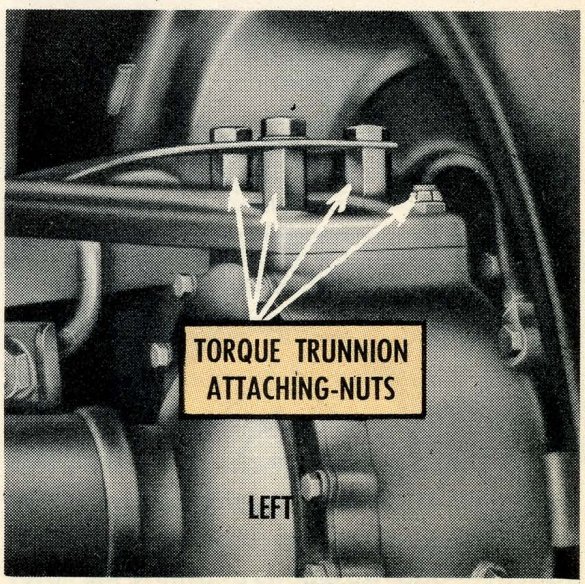
SHIMMY AND WANDER

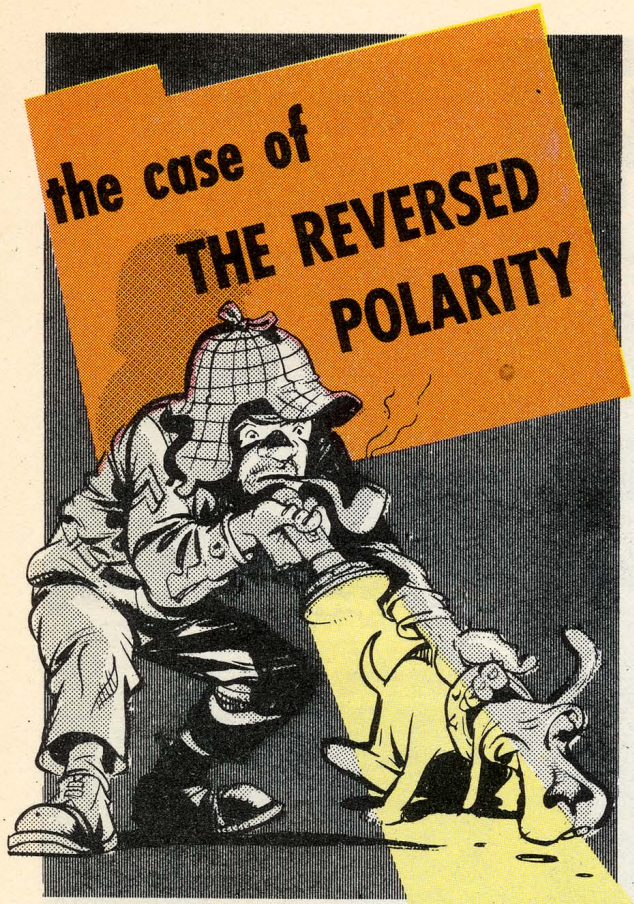
If your M135's acting like a fugitive from a grass skirt, look for loose steering-trunnion attaching-nuts **under** the front-axle brake-hose-shields (left and right).

People have been torquing the three cap screws that hold the brake-hose shield in place which does as much good as nothing. You've got to remove the shield, and torque the trunnion attaching-nuts (see figures) to 80-105 foot pounds.

If they're too tight, you'll have hard steering; if too loose, you'll have shimmy or wander.







Some strange and mysterious cases of reversed polarity have been reported.

And the whodunnit in this case seems to be the practice of assembling a home-made jumper cable to start vehicles having a dead battery, by connecting them electrically to another vehicle through the slave receptacle.

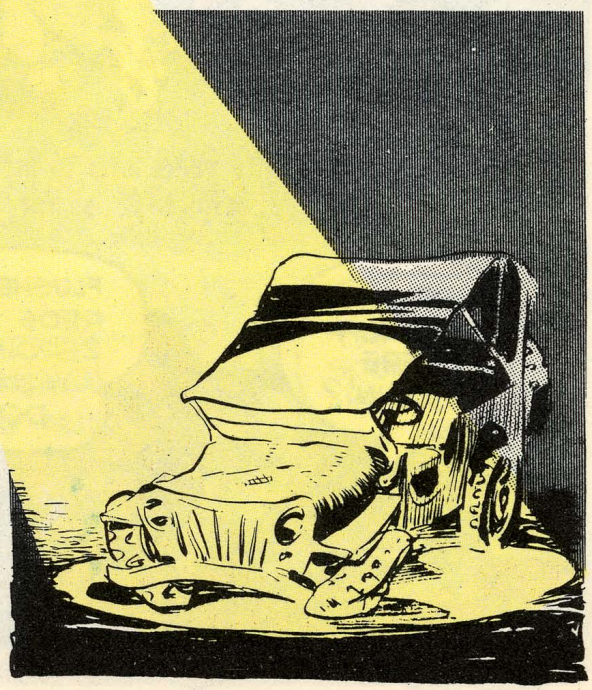
Which is quite all right, y'understand—if you're careful.

The trouble begins when you're not careful.

You can get your leads hooked up wrong and still start the engine, which reverses the polarity of the system. As soon as the engine starts, and turns the generator, the reverse current cutout closes, and the reversed polarity of the external battery reverses the polarity of the generator. This, if not detected, will freeze the regulator relay and eventually burn out the generator and the regulator.

You can spot the condition right away, however, and correct it easily. Look at the ammeter in the started vehicle, gunning the engine a little. If the needle swings over into the discharge side, you have a reversed generator.

The cure is simple. Shut off the engine, go outside and reverse your jumper connections. Check your hook-up by turning on your headlights (on the dead vehicle) and read the ammeter. If it shows discharge, your hook-up is correct. Start your dead vehicle and the same process that got you into trouble will now get you out. Before driving, again read your ammeter, headlights off and engine running. Betcha she shows charge.



JOE DOPE

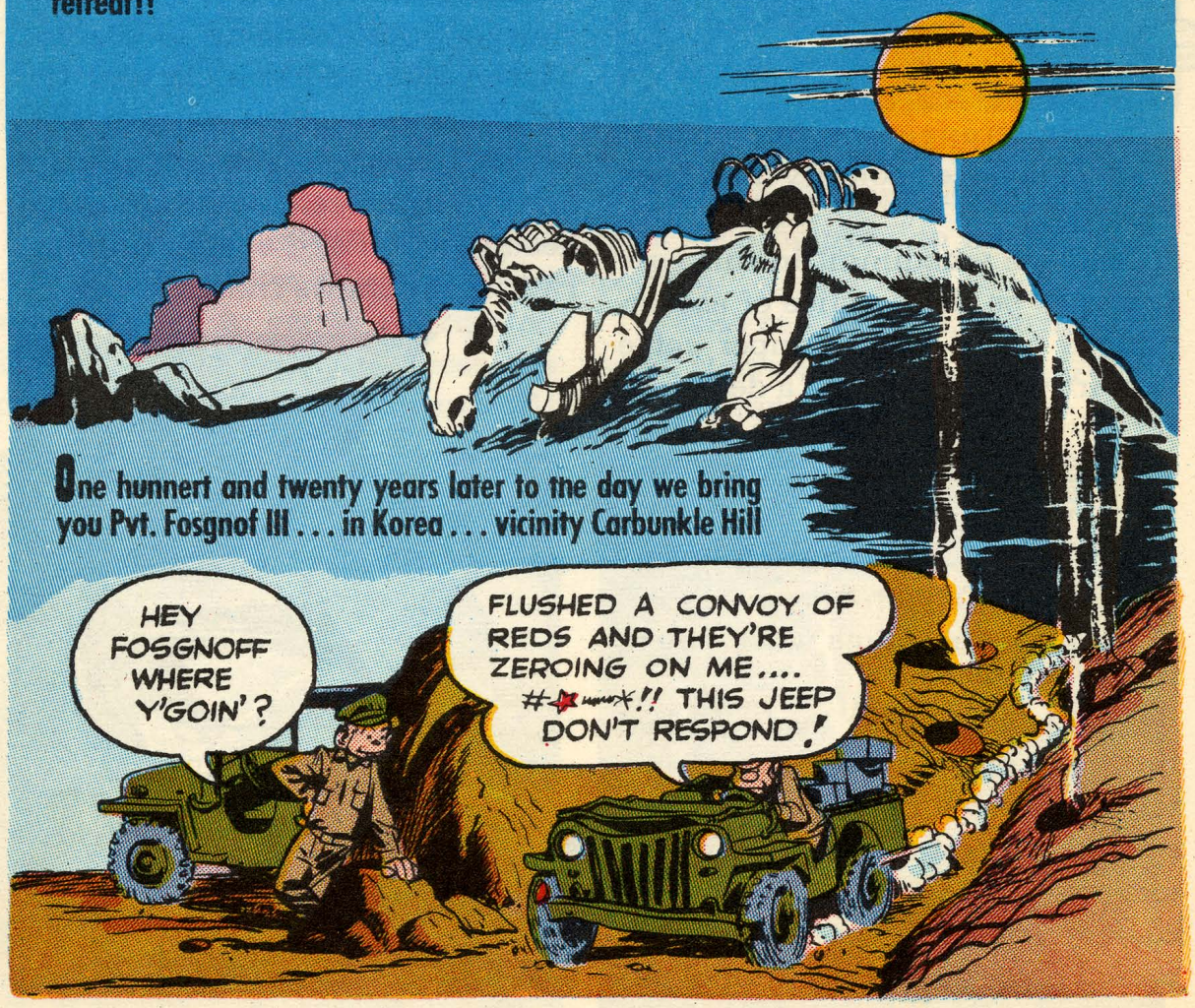
HOW TO TUNE UP AN ENGINE

Ever hear of FOSGNOF'S LAST STAND at Pimple Hill back in '72?

Well, sir, seems tho Sgt. Fosgnof of the U. S. Army flushed a convoy o' *!©☆#... and he desired to retreat!!

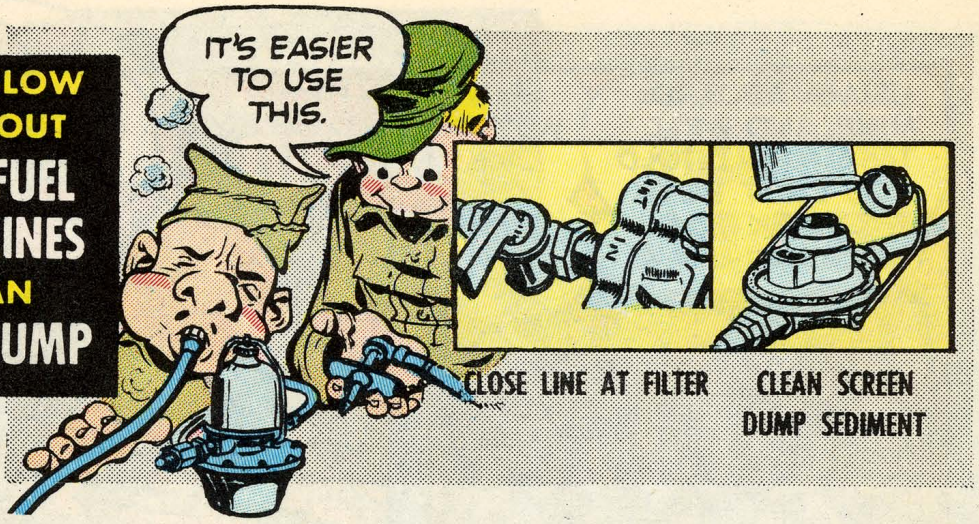
But . . . yes . . . but the dang nag was tired . . . wot with poor maintenance, etc. (poor thing was due for a tune up . . .) Alas . . . PIMPLE HILL

One hunnert and twenty years later to the day we bring you Pvt. Fosgnof III . . . in Korea . . . vicinity Carbunkle Hill

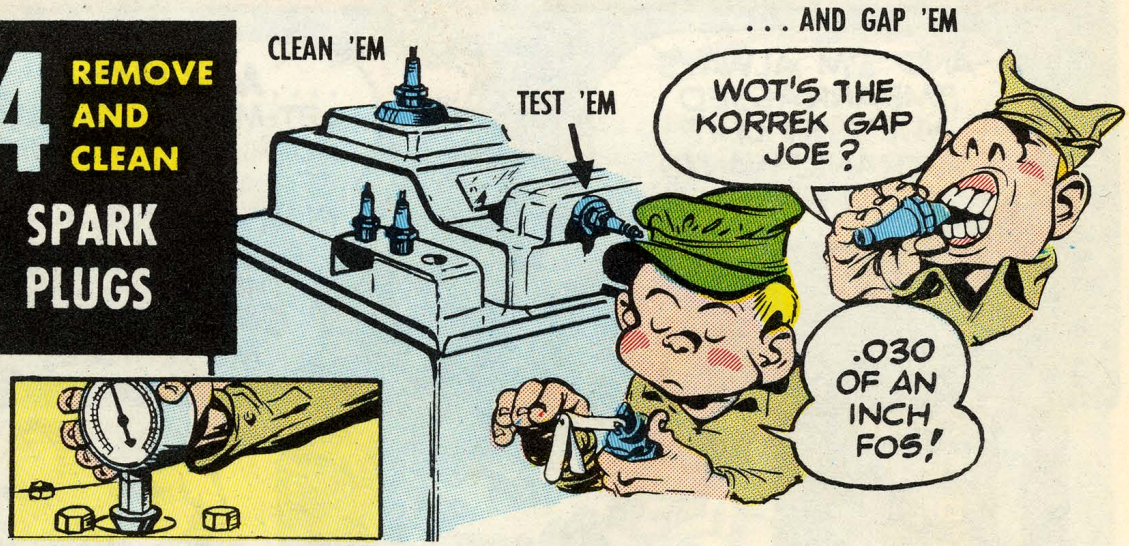


CLIMB ABOARD MINE AND WE'LL TAKE OFF...I TOLD YOU LAST WEEK TO ASK FOR A TUNE-UP!
AAAHH... WOT C'N LACK OF TUNE UP DO?
IT CAN LOSE YOU YOUR VEHICLE!
AND I'M ALWAYS EMBARRASSED WHEN MY UNIT MECHANIC WANTS ME TO HELP HIM.
....MY BOY... LET ME SHOW YOU HOW... AS A MATTER OF FACT, NOW'S THE RIGHT TIME 'CAUSE I JUST FINISHED THE PERIODIC GREASING ON MY VEHICLE!
1 CHECK . . . FUEL OIL WATER
CHECK BATTERY
LOOSEN NUT AND SPREAD TERMINALS
CLEAN OFF CORROSION WITH AMMONIA AND WATER MIX
CHECK CELLS WITH HYDROMETER CHECK BATTERY VOLTAGE
2 DRAIN WATER AND DIRT FROM
GAS TANK
REMOVE GAS-TANK DRAIN-PLUG, DRAIN THE WATER AND DIRT . . . AND REPLACE PLUG
REPLACE CAP QUICKLY-SOON AS WATER IS OUT... SAVE GAS.

3 BLOW OUT FUEL LINES CLEAN FUEL PUMP



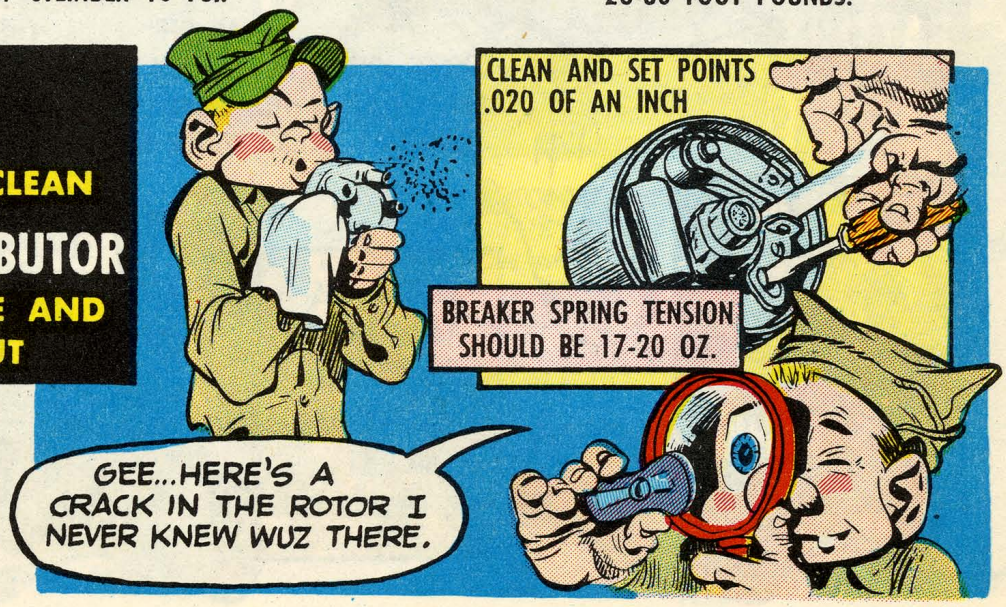
4 REMOVE AND CLEAN SPARK PLUGS



TEST COMPRESSION AT CRANKING SPEED . . . MINIMUM COMPRESSION 70 PSI—MAXIMUM VARIATION FROM HIGH TO LOW CYLINDER 10 PSI.

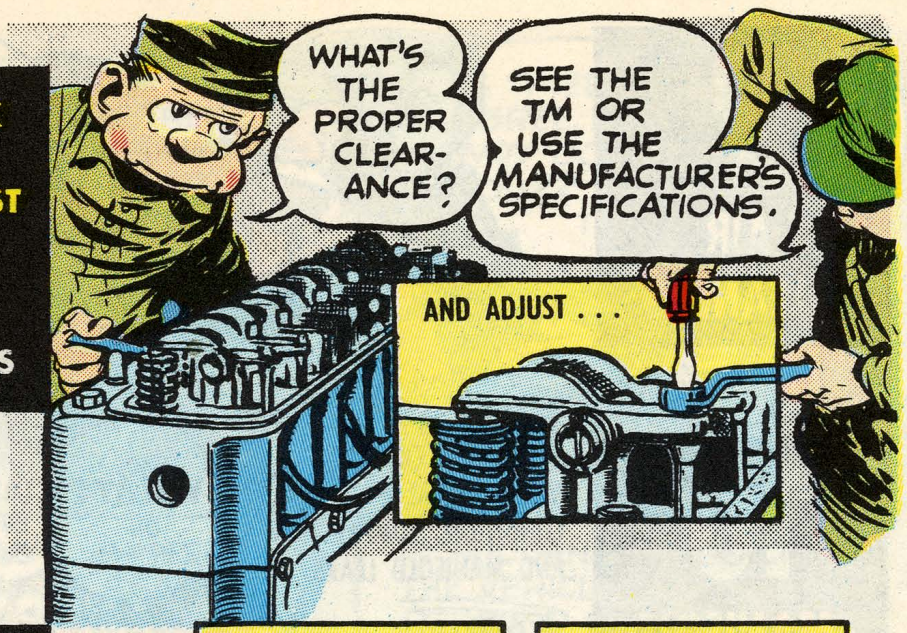
REPLACE SPARK PLUG GASKETS, IF AVAILABLE . . . TORQUE PLUGS 28-30 FOOT POUNDS.

5 CLEAN DISTRIBUTOR INSIDE AND OUT



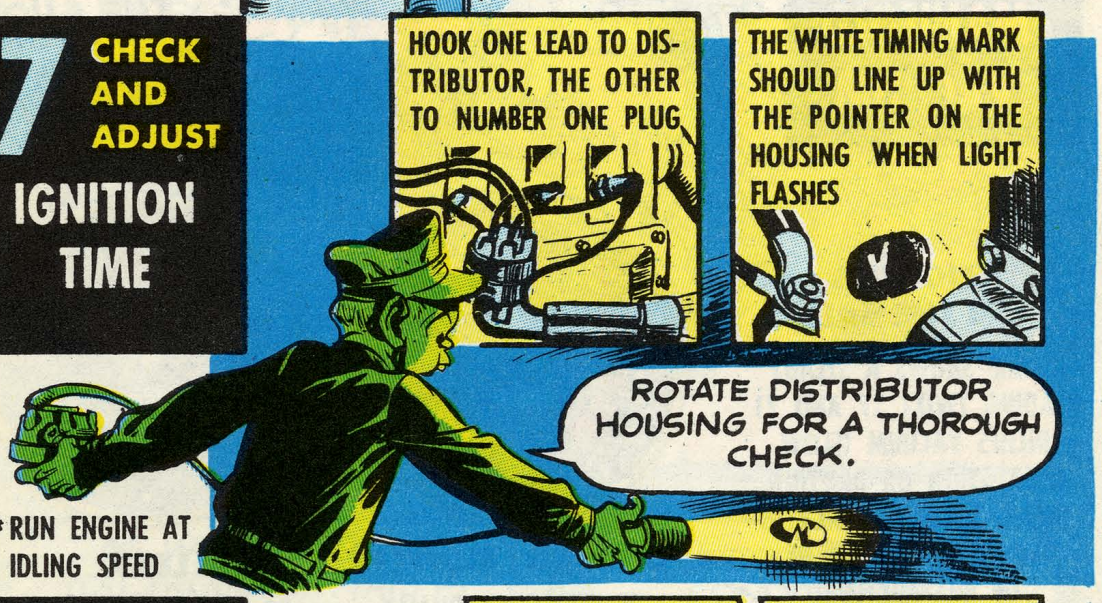
*6 CHECK AND ADJUST VALVE CLEARANCES

*RUN ENGINE AT IDLING SPEED



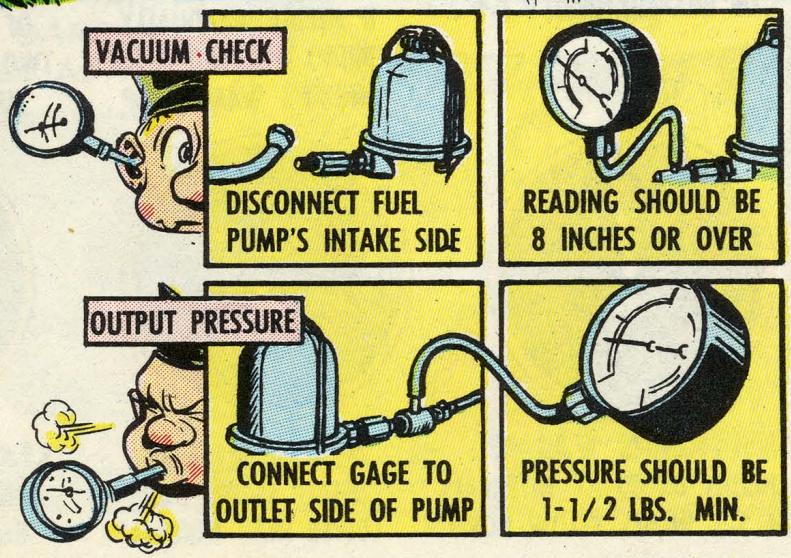
*7 CHECK AND ADJUST IGNITION TIME

*RUN ENGINE AT IDLING SPEED

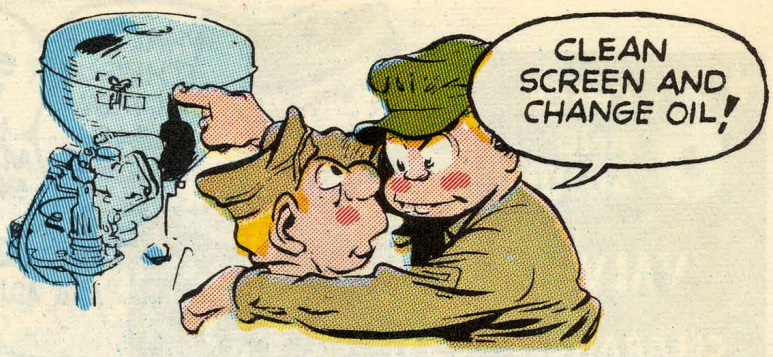


*8 CHECK PERFORMANCE OF FUEL PUMP WITH A GAGE

*RUN ENGINE AT IDLING SPEED



9 AIR CLEANERS

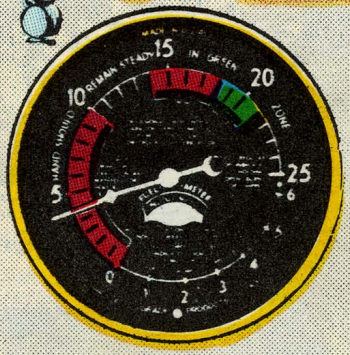


10 MANIFOLD VACUUM

CHECK FOR CORRECT MIXTURE, VALVE CONDITION, COMPRESSION, AND MANIFOLD LEAKS

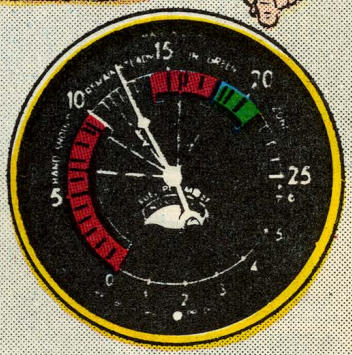
ENGINE'S ON THE BALL

IF SHE SHOWS A STEADY READING TWIXT 17 AND 21 INCHES VACUUM (SLOW OSCILLATION OR DRIFTING NEEDLE USUALLY INDICATES IMPROPER ADJUSTMENT OF IDLE MIXTURE)



CHOKED MUFFLER

IF NEEDLE GRADUALLY DROPS TO ZERO AFTER ENGINE'S WARMED UP . .

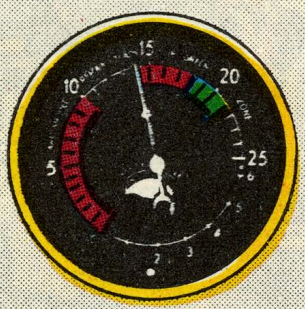


LEAK

OF COMPRESSION BETWEEN TWO CYLINDERS IF THE NEEDLE JUMPS TWIXT 5 AND 19

STICKING VALVE

IF NEEDLE DROPS AT INTERVALS FROM 3-5 INCHES BELOW NORMAL



POOR RINGS

NEEDLE STEADY BUT LOWER THAN NORMAL

LEAKY MANIFOLD

NEEDLE STEADY BUT READING BELOW FIVE . .

CLEAN UP . . .
TIGHTEN
LOOSE PARTS
THAT'S ALL THERE IS TO IT EXCEPT FOR RE-PLACING MISSING TOOLS AND CLEAN-UP.
TM-
THEE-OR-ETIKLY I AGREE, BUT ACK-CHILLY WOT DOES IT DO FOR YOU?? ANSWER ME THAT!
WHY MAN... IT KEEPS THE ENGINE READY TO PERFORM....
IN SUDDEN EMERGENCIES THE VEHICLE WILL RESPOND QUICKLY...
...AS WELL AS SAVE YOU TROUBLE...THIS IS TRUE ON A GARRISON AS WELL AS...
...UNDER TACTICAL CONDITIONS!

PRODUCED UNDER SPECIAL LICENSE TO U.S. DEPT. DEFENSE COPR. 1952 WILL EISNER PRODUCTIONS

PRODUCED UNDER SPECIAL LICENSE TO U.S. DEPT. DEFENSE COPR. 1952 WILL EISNER PRODUCTIONS

UIPMENT .. Take care of it

HOW TO MEASURE

IN spite of all the fond care all gunners are said to give all guns, a lot of things happen in normal use that you never notice until you start to miss more than you're hitting.

No matter how you coddle and clean and oil and wipe, you still got to haul your weapon to where it's needed, over ground that'd shake the teeth off a buzz saw. When it gets there it sits around in the open to be shrunk by chill of night, and swelled to bursting by raw sun and gunpowder. For all its natural life your gun is chewed by sand and silt, and all its movements are battered and shocked by round after round of pounding impact.

Let's see what can happen.

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HOW TO MEASURE

HIGH ANGLE CANT*

ON YOUR HOWITZER

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In the first place there's Brinnelling. This is the name for what happens when metal pounds against metal and makes dents or troughs. Then there's shrink and stretch of differing alloys, or even the shift of molecular structure, from extremes of heat and cold and from the twist and shock of terrain vibrations. All this beating and battering does little to improve the Swiss-watch precision of those multi-millimeter beanshooters hung between the two slabs of steel you call trunnions.

By and large, the average gun or howitzer takes most of this beating without much visible damage. But it's what you can't see that hurts your score and lets your target scramble away to safety when you think he's neatly zeroed in a roadblock.

This is the cant that doesn't always show up in your sights. It gives you a rough time at the high-angle ranges because it only affects your fire when the tube's away up in the air where the clouds won't sit still to be boresighted. Your best computations land your shells hundreds of yards off the beam—and you won't even know why.

LIKE OTHER MACHINERY, YOUR ARTILLERY WANTS AN OCCASIONAL LOOKING OVER TO BE SURE ITS GEOMETRY IS STILL LIKE THE ARSENAL MEANT IT TO BE.

If you think this can't happen to you, ask the nearest observer how often you landed your spotting rounds anywhere close to where they were ordered. Especially when you're up around five to eight-hundred mils—with a gun tube a degree to one side of where you think it should be.

The causes are many and the corrections are exacting. But with accuracy being the ace that often lets the winner take his sleeves home full of arms, you'll want to run through the checks on the following pages. They'll soon tell you whether or not your guns are shooting where they're looking.

*The word **cant**, as used in this article, covers all things that cause the gun to be off-target when it should be on.

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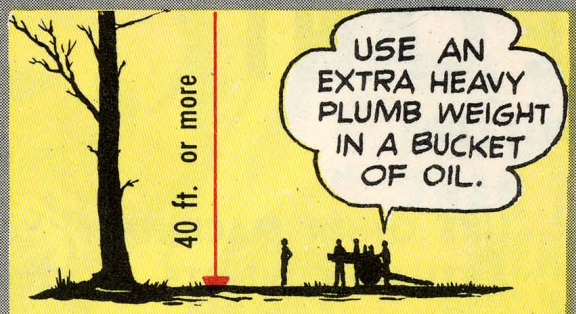
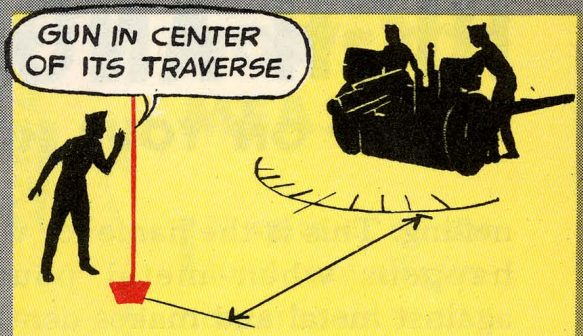
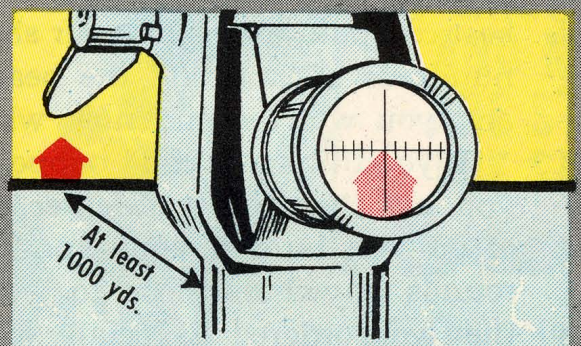
HOW TO QUICK CHECK ON-CARRIAGE



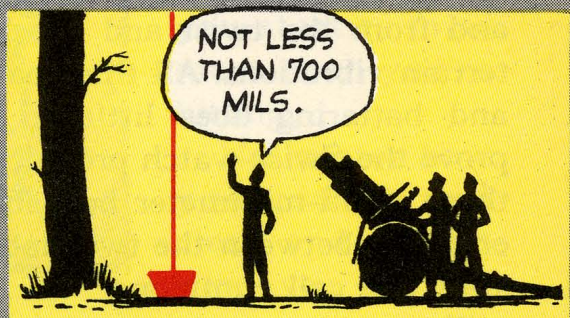
1 Hang a plumb line from a rafter or tree in a fairly level area.



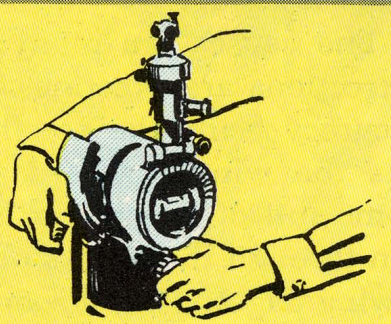
2 Place gun muzzle, with crosshairs on it, about 10 ft. from plumb line.



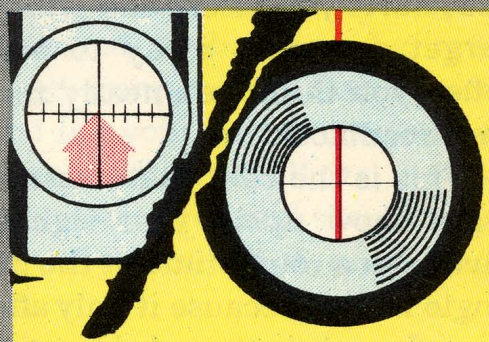
5 Sight on an aiming point with panoramic scope at 2400 or 5600 mils.



6 Relevel-resight as needed. Then elevate at 100-mil steps to 800 mils.

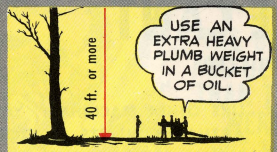


9 Relevel bubbles and sight on aiming point again . . . traverse if need be.



10 When on aiming point at each 100 mils, see if muzzle hair falls on plumb.

HOW TO QUICK CHECK ON-CARRIAGE FIRE CONTROL EQUIPMENT



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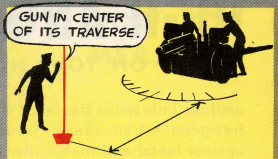

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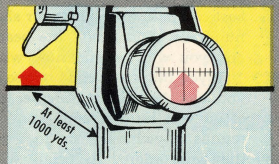

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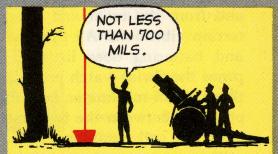

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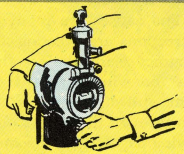

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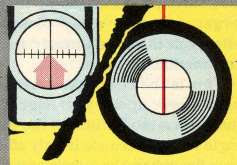

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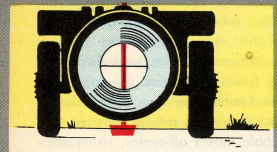
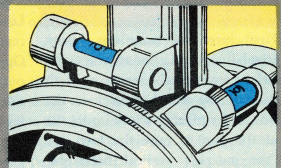
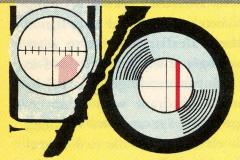


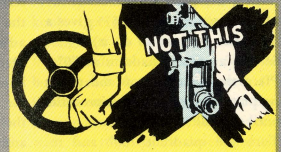
3 Boresight at zero elevation. Put vertical hair smack on plumb line.



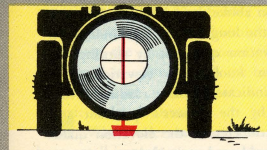
4 Level the cross-level and longitudinal bubbles on the sight mount.



7 At each 100-mil step, level scope bubbles & sight on aiming point.



8 If sight's off aiming point, bring it on by traversing gun only.



11 If they register at all steps, within 1-1/2 mils, equipment is okay.

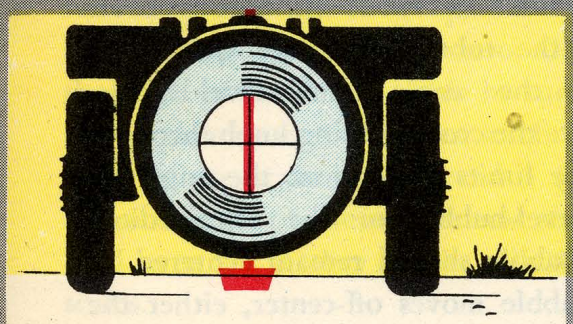
If the sight is on the aiming point

But the tube's not on the line . . .

12 GO GET ORDNANCE

TURN PAGE

FIRE CONTROL EQUIPMENT



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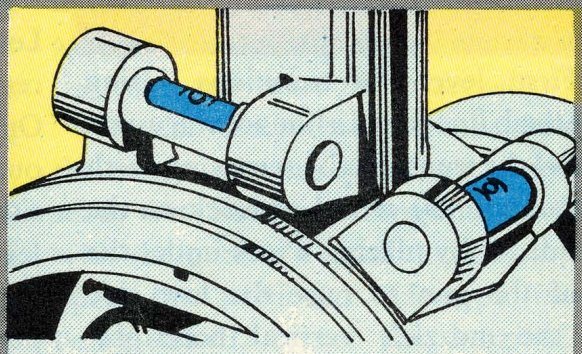

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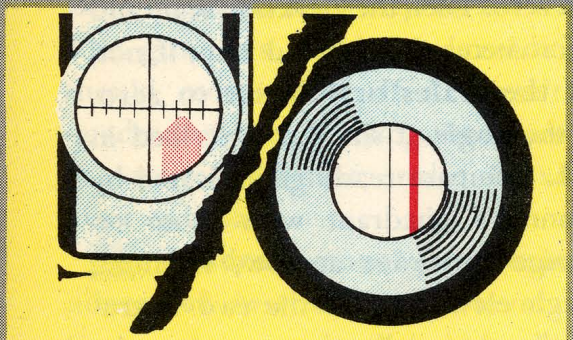

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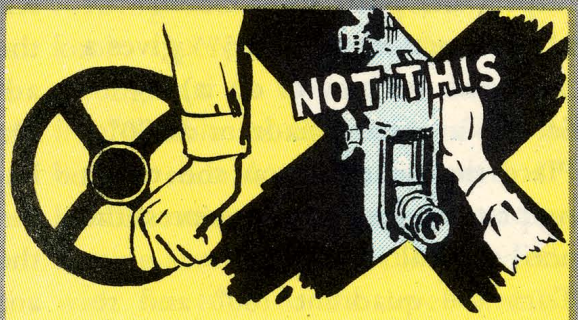

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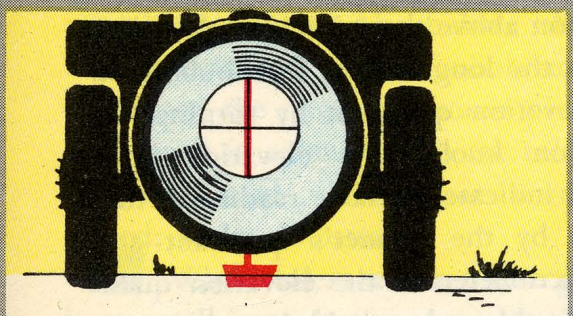

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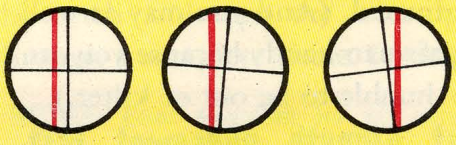


But the tube's not on the line . . .

12 **GO GET ORDNANCE**

TURN PAGE

WHEN YOU GET TO THIS POINT, REMEMBER THE OLD PROVERB ABOUT TIME, TOOLS AND TRAINING.

1. First, level the trunnions. Using your plumb line for hairline accuracy, you can level the trunnions by removing earth from beneath the wheel or track on the high side, or by placing a jack under the axle of the gun to raise the low side until the muzzle's vertical boresight-string is dead on the plumb line, both at 0° elevation and also at the top of the plumb line (not less than 700 mils).

2. Inspect the gunner's quadrant for general malfunctions (TM 9-575 gives a good rundown on how to do it).

3. Set the accurate quadrant at "0".

4. Place the quadrant on the tube's leveling plates and elevate or depress the tube until the bulb is centered.

5. Turn the quadrant 180° and replace on the leveling pads (usually called end-for-end test).

6. Cross-level test. Center the cross-level bubble and turn the elevating knob throughout the limits of motion. The cross-level bubble should remain centered; if it doesn't remain centered, the level vial is not correctly alined and must be adjusted. (And you may as well have a repairman handy because you can expect the bubble to be out of kilter.)

7. Pivot azimuth alinement test. Center the already checked cross-level bubble. Elevate and depress the tube, checking to see that the boresights track the plumb line, and at the same time, watch the cross-level bubble. The bubble should remain centered. If the bubble moves off-center, the pivot isn't alined in azimuth with the tube and must be corrected.

8. Pivot vertical-alinement test. Level the tube. For range quadrants, center the angle-of-site level-bubble. Operate the cross-leveling knob throughout the limits of motion; the angle-of-site level-bubble or the longitudinal level-bubble should remain centered. If the bubble moves off-center, either the pivot isn't alined (parallel with tube's axis) or level vial isn't correctly installed.

9. Elevation scale test. Range quadrants: Level the tube. Set the elevation scale at zero. Then the elevation scale and the micrometer should read zero, if not, adjust the scales or indexes to zero. Make the angle-of-site test described in Par. **11.** Compare readings indicated by the gunner's quadrant with those on the range quadrant at low, medium, and high elevations. If the two instruments disagree, adjustments or repairs are called for.

10. Elevation quadrants. Place the tube at zero or at the nearest 100 mils elevation above the minimum elevation. Center the longitudinal level-bubble on the elevation quadrant by turning the elevation knob. The elevation scale should indicate the same reading as that shown by the gunner's quadrant and the micrometer of the elevation quadrant should read zero. If the two instruments don't agree, set the elevation scale to agree by resetting the elevation micrometer to zero. Compare readings indicated by the gunner's quadrant with those on the elevation quadrant at low,

medium, and high elevations of the tube. If the two instruments differ at any elevation, adjustment or repair is in order.

11. Angle-of-sight test. Level the tube, cross-level the range quadrant, and set the elevation scales at zero. Center the angle-of-site level-bubble by turning the angle-of-site-micrometer knob. The angle-of-site scale should read 3 (300) and the angle-of-site-micrometer should read zero — if they don't, adjust the scales.

12. Quadrant-mount leveling-shoes, alinement test. Level the tube with the gunner's quadrant placed on the leveling plates on the breech ring. Place the same quadrant on the quadrant mount. The gunner's quadrant level-bubble should center itself. If it doesn't, the quadrant-mount leveling-shoes are not in correct alinement; make the adjustment or repair.

13. Quadrant-mount-pivot azimuth-alinement test and cross-level test. Center the cross-level bubble. Elevate and depress the tube, checking to see that the bore-sights track the plumb line, and at the same time watch the cross-level bubble. The bubble should remain centered. If the bubble moves off center, the quadrant mount pivot is not alined in azimuth with the tube, or the cross-level vial is not correctly alined; make adjustment.

14. While tolerances are not given here, small imperfections are okay if the equipment checks out to within 1-1/2 mils. (Page 389, Panel 11.)

15. Telescope-mount-actuating-arm pivot-alinement tests. Azimuth alinement: center the previously tested cross-level bubble. Elevate and depress the tube, checking to see that the boresights track the plumb line, and at the same time watch the cross-level bubble. The bubble should remain centered. If the bubble moves off center, the actuating-arm pivot is not aligned in azimuth with the tube and must be corrected.

Vertical alinement: Level the tube. If the mount contains quadrants alinement seats, set cross and longitudinal level with the gunner's quadrant. Depending upon the particular telescope mount being tested, center the longitudinal level-bubble by turning the longitudinal leveling knob or the elevating knob, or center the angle-of-site level-bubble by turning the angle-of-site-micrometer knob. Operate the cross-leveling knob throughout its limits; the longitudinal level-bubble or the angle-of-site level-bubble should remain centered. If the bubble moves off center, either the actuating-arm pivot is not alined vertically with the tube or the level vial is not correctly alined and must be corrected.

16. Panoramic telescope prism-alinement test. Make sure there's no looseness between the panoramic telescope and the mount socket. If there is, tighten the tangent screws. Traverse and elevate the gun to get the scope reticle cross-hairs on an aiming point. Release the catch and turn the telescope head through a complete circle. Look through

NOTICE: Final elevation for all indirect fire should always be set with the fire-control instruments. Using the gunner's quadrant on the breech-ring levelling pads is incorrect. It will give false readings because its accuracy is affected by tube elevation and trunnion cant.

the telescope to see that the intersection of the cross-hairs is exactly on the same sighting point. Turn the telescope head through a complete circle in the opposite direction, and check that the center of the cross-hairs returns exactly to the same aiming point. If the intersection of the cross-hairs has moved off the sighting point either vertically or horizontally after rotating the head in either direction, the prism alinement within the telescope has become displaced and must be corrected.

17. Telescope mount socket-alinement tests. Test for alinement in a vertical plane parallel to the tube's vertical axis. Center the cross-level bubble. With the telescope azimuth scales set at zero, traverse the gun and sight on the plumb line until it coincides with the vertical hair of the telescope reticle. Sight through the telescope and rotate the elevation micrometer knob through the extent of travel.

Do not force mechanism beyond extent of travel. The vertical hair should remain in coincidence with the plumb line. If the vertical hair and the plumb line do not remain in registration, the scope socket is not properly alined on the mount and must be corrected.

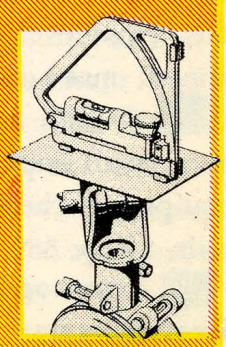
18. Test for alinement in a vertical plane, perpendicular to the tube. (Carriages on which the tube can be placed at zero elevation.) Depending upon the particular telescope being tested, center the longitudinal level-bubble by turning the longitudinal leveling knob or the elevating knob, or center the angle-of-site level-bubble by turning the angle-of-site micrometer knob. Set the panoramic telescope azimuth scales to 1600 mils (pointing 90° away from the tube). Hang a plumb line and aline it with the vertical hair in the telescope reticle. Sight through the telescope and rotate the telescope elevation micrometer knob through the extent of travel. The vertical hair should remain in coincidence with the plumb line. If the vertical hair and the plumb line do not remain in coincidence, the telescope socket and the mount are not correctly alined and must be adjusted or repaired.

(Incidentally, all major adjustments to the Fire Control equipment should be made by Ordnance.)

When these checks and adjustments are run through, the bore-sight vertical line should track the plumb line and the sight should stay on your aiming point. If the sight doesn't stay on, or return to the aiming point, there's residual cant in your artillery piece.

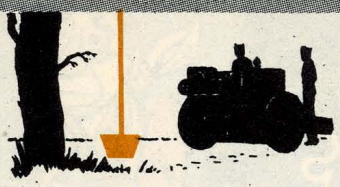
When an artillery piece of this type is found and immediate attention cannot be given to locating the cant, temporary adjustments can be applied to the gun by pre-determining the cant at various elevations and making corrections for it before firing.

The quadrant method given in all your books, to test scope mounts with a steel or glass plate atop the mount socket, is no longer recommended. Above tests 6, 7, and 8 will give a more accurate reading.

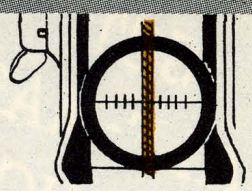


HOW TO MAKE A CANT CHART

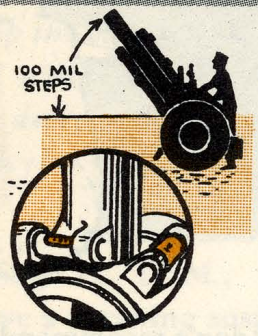
1. With gun at center of traverse and zero elevation boresight on plumb line.



2. Aline the carriage by the plumb line method. (See page 390, Par. 1).



3. Line in an aiming stake at 100 yards dead ahead ("0" azimuth).



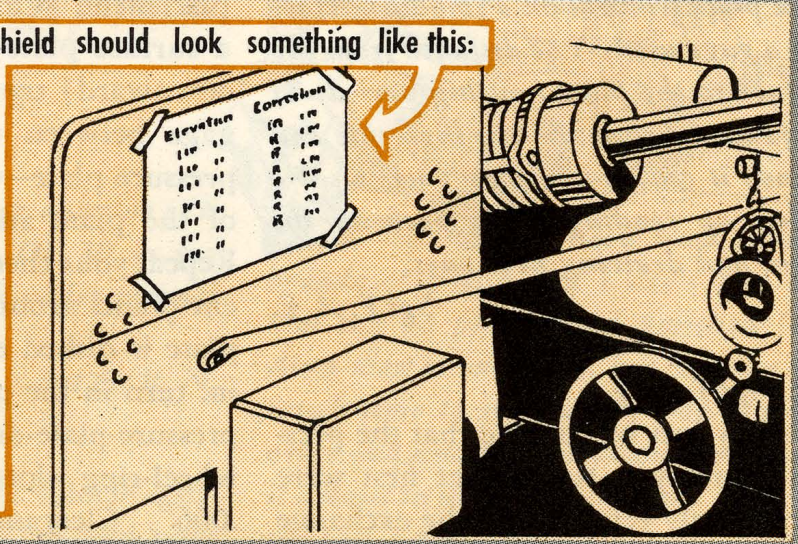
4. Elevate tube to 100 mils. Relevel both panoramic sight mount bubbles.

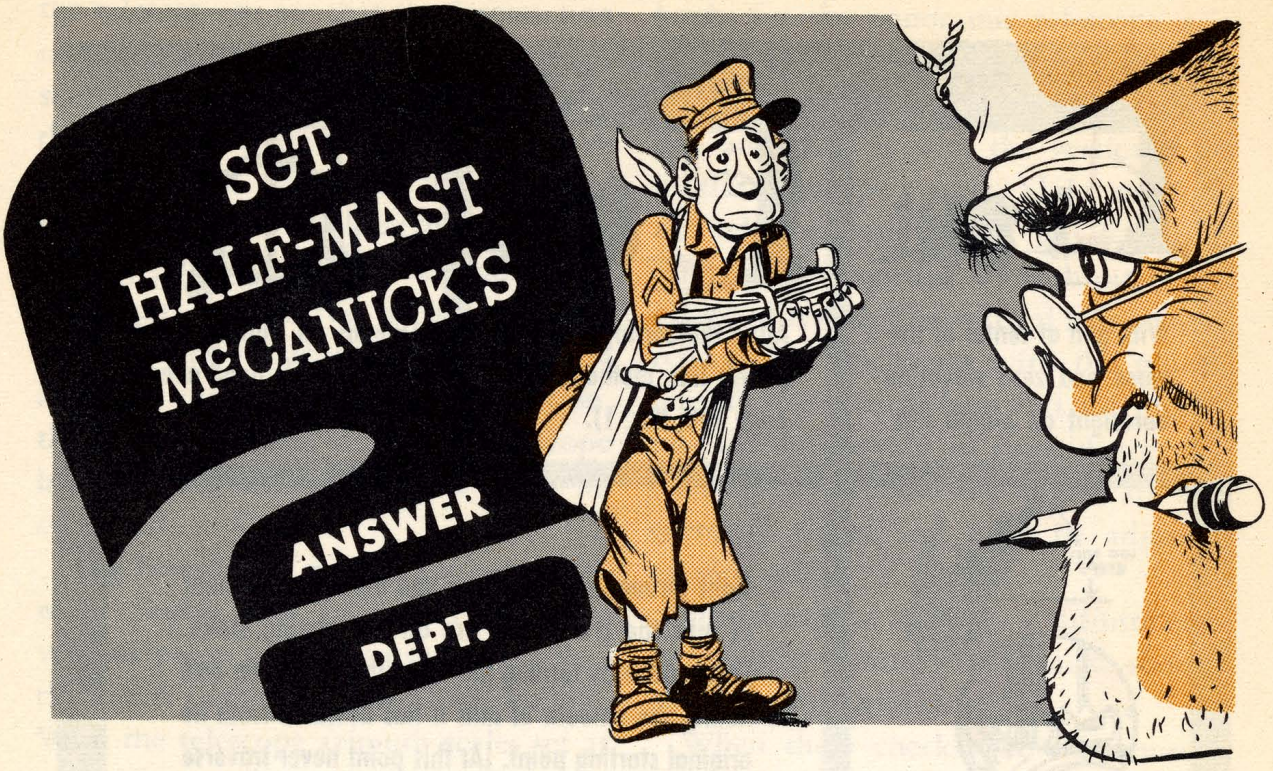
5. Sight through the telescope and determine amount of mils the cross hairs are off the aiming stake. This is done by turning the azimuth micrometer and noting the amount of mils it has deviated from its original starting point. (At this point never traverse the gun to bring sight hairs on aiming stake. Have tube on plumb line at all times.) This mil deviation is your cant correction for 100 mil elevation.

6. Now proceed by 100 mil steps to maximum elevation. Run thru step #5 at each elevation and find the cant deviation. Record these mil corrections on your gun shield so they can be applied in proper directions to correct for your residual cant.

7. The chart on your shield should look something like this:

Elevation	Correction
100′ M	R 0 M
200 M	R 5 M
300 M	R 0 M
400 M	R 15 M
500 M	R 19 M
600 M	R 16 M
700 M	R 0 M
800 M	R 0 M
Etc.	





CLUTCH PRESSURE-PLATE

Dear Half-Mast,

I have a question about the clutch pressure-plate of the IHC H-542-11. We had several rebuilt assemblies come back to our outfit because they wouldn't operate properly. Each stud had the same number of shims out when the back plate was put on a smooth surface and a gage used. The distance from the surface to the plate housing varied. If we removed shims on the high side and evened it out, it still didn't work. We ended up sending them back to the depot and drawing new ones.

Sgt F. A. F.

Dear Sgt F. A. F.,

It may just be possible that the pressure plates you received at first were not properly rebuilt, and the exchange was probably the best bet under the circumstances. I don't recommend much field work on this type clutch (unless a hydraulic press is available) since the pressure spring exerts a 600-lb pressure. When new, they use 6 shims on each flywheel-ring stud—and if there are less than two shims remaining on each stud, the clutch driven-disk facing is undoubtedly worn enough for replacement. With the pressure plate on a surface plate (with friction surface downward) try to insert a .015″ feeler gage between the surface plate and pressure plate—working from the bore of the plate and not the outer edge. Repeat your check at six or eight different points around the bore, and if the plate is dished enough to let the gage in, turn in the plate. Clearance of the pressure-plate-driving lugs in the flywheel-ring slots should be .004″ to .006″. Clearance of clutch flywheel-ring in the clutch sleeve should be

1-1/4″ (plus 1/16″, minus 0″). Diameter of the clutch-pressure-lever locking-ball is 9/32″.

Half-Mast

REBOUND CLIPS

Dear Half-Mast,

Some of our jeeps have spring-leaf clamps which are not bolted, but clamped on. The question is, how can we keep the clamp tight? Would some sort of wedge between the clamp and spring decrease the spring's operating efficiency?

SSgt H. T. M.

Dear SSgt H. T. M.,

I have a sneaking suspicion that you know the answer as well as I do. Because your point about the wedge restricting the spring action too much, hits it right on the noggin.

Rebound clips don't need to be tight to function all right. As long as the open side of the clip is parallel to the opposite side, don't worry about it.

Half-Mast

OE AND PE

Dear Half-Mast,

Is it OK to use Oil, Preservative (PE 30) in place of regular OE 30 in my M38? Will it turn black under normal use with a good filter?

Sgt G. R. N.

Dear Sgt G. R. N.,

Stick to regular OE for vehicle operation. In a pinch it's OK to feed your engine PE 30, but this lube isn't intended for heavy-duty service. Its primary job is to guard the inner works of the engine and other metal parts against rust—and it's ear-marked for vehicles tagged for limited storage or shipment (see TM 9-2835, page 38, par. g).

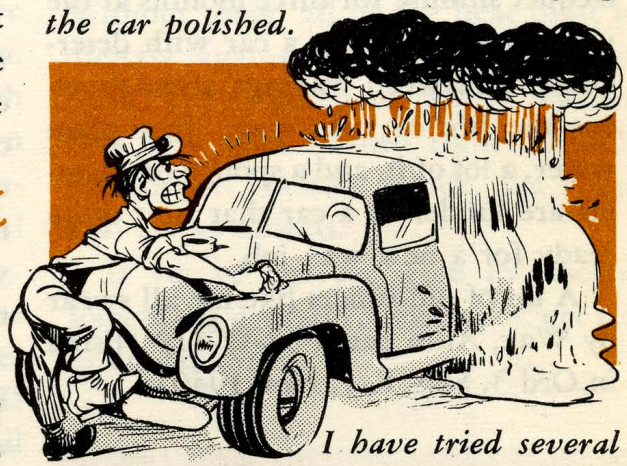
Filters don't catch all the carbon binders (gum, etc.,) washed-off by the detergent additives in the oil. Some of the stuff remains in suspension in the oil and changes its color. Under normal operation—all other things being equal—this change in color doesn't cut-down the oil's lubing powers.

Half-Mast

CAR POLISHES

Dear Half-Mast,

I drive a staff car for ASU Provisional Group, and I have a hard time keeping the car polished.



I have tried several brands of polish and I can't find one that can be put on and polished fast. Auto wax is excellent, but it takes too much time to wax a car. The places I drive and weather conditions here make it a must to use a polish often. Can you suggest a good polish?

PFC T. M. T.

Dear PFC T. M. T.,

You and I and a million other guys are looking for the same thing—a "miracle" car polish. And we all shy away from auto wax for the same reason—it's excellent stuff, but it demands plenty elbow grease. Still, with automotive men who know their "finish" best, it's the preferred auto polish.

Some new products on the market are much faster polishers, but as with wax, they can only be applied to a perfectly clean surface—so you've still gotta scrub before you put on the dub—and then when a new polish-job is needed the old stuff has to be thoroughly and carefully removed with naptha or other special cleaners. The same treatment goes when painting (or even just spotting) is called for.

Unless you're in the worst kind of climate, a good wax job should keep lacquer shining for three months at the very least. Washing a car with detergents in between waxings often shortens the life of auto wax. Just plain water, a lot of it, and a sponge or chamois are kinder to a car that isn't quite ready for a new wax job.

A lot of old-timers like me all swear by Wax, Auto paste, 52-W-119 (listed in Ord 3, SNL K-1, Nov 1949).

Half-Mast

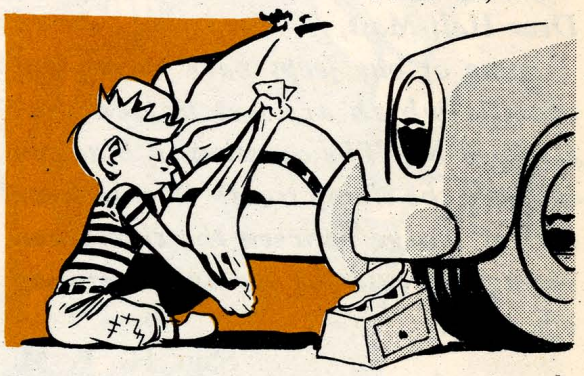
RUST-CURE FOR CHROME

Dear Half-Mast,

What can you suggest for use in effecting preservation of chromium on Ordnance vehicles stored at installations on coast-lines? I ask this because there are a number of commercial-type vehicles stored here at Camp Cooke and the salt air is causing the chromium parts to rust quite badly.

What can be used to prevent further rusting?

F. L. G., OCT



Dear Mr. F. L. G.,

Got a couple good suggestions, but your choice depends on what you mean by "stored." Is it gonna be a long term affair, say maybe a couple months, a year or so—or are these vehicles being put aside temporarily?

Before you do anything about prevention, how's about first getting rid of the old rust—you can rub down the chrome with some steel wool or wash off the rust with mineral spirits, paint thinner or metal cleaner—but end up with as clean a surface as possible. And then, if it's long-term storage you're after, paint the chrome with a thick covering of Compound, Rust Preventive, AXS-673. Messy, to be sure, but it'll keep out the salt air. (Come time to take the vehicles out of storage, wash off the AXS-673 with Stoddard Solvent, 51-S-4350 and they'll be as good as new.)

And for good general protection from rust, fill a spray gun with 52-C-3099 Compound, Insulation, Ignition (3-182). This is an almost clear liquid

which coats the chrome and keeps it coated for six months.

Both are tried-and-true preparations used on vehicles to prevent corrosion during salt-water fording, so q.e.d.

Half-Mast

MIXING ENGINE OIL

Dear Half-Mast,

Can you make 20 weight oil by putting equal amounts of 30 weight and 10 weight together? We have a staff car in our motor pool (Buick '51) and the manufacturer recommends the use of 20 weight oil.

Sgt G. R. N.

Dear Sgt G. R. N.,

Sorry, but the answer is no. The simple arithmetic of "add and divide" won't work in this case—mixing 30 weight and 10 weight oil will not give you 20 weight for your '51 Buick sedan.

Each oil weight is produced with very definite characteristics of its own —specifically its molecule size. Oil research shows that merely mixing equal amounts of two weights, as you suggest, won't combine 'em. It's much the same as mixing raw peas and potatoes —they'll mix but they won't blend. If you'd like to see how the different oil weights separate, put the mixture in a jar, shake well, and let it sit around awhile.

The Langmuir theory of lubrication is illustrated in TM 9-2835 (May 1949), if you aren't familiar with it you may find it interesting.

Since 20 weight oil isn't stocked, could be your post quartermaster office can supply it through local purchase. Also look into SR 715-110-50 (26 Jan 50). It's the SR that covers local-purchase authorization.

Half-Mast

MANIFOLD-GASKET PILOT-RINGS

Dear Half-Mast,

Concerning the metal ring pilots for manifold gaskets on the GMC engines used in the CCKW and AFKWX trucks, please answer the following questions:

Do they belong in the ash can?

How important are they?

Do they contribute to gasket failure if in the ash can?

Mr. L. C. A.

Dear Mr. L. C. A.,

Those metal rings act as a shield on the exhaust side of your manifold. Without them, all of the heat blast is directly against the gasket. Without them, you're going to replace gaskets that have been burned right through the copper. Besides which, the rings also act as dowels.

If you've got the urge to discard something, I would suggest you get rid of the ash can.

Half-Mast

'WINDY' WINDSOCK'S AIR MAIL DEPARTMENT

Dear Windy,

It is a pleasure to note that you realize the importance of preventive maintenance for Army Aircraft. This new phase of Ordnance has, during the past year expanded far beyond our expectations, and is still growing. With its rapid growth, the inevitable influx of hastily-trained mechanics offers a challenge which PS Magazine can assist in combating. **Preventive maintenance and proper handling of aircraft can never be overstressed.**

I would like to recount some of my own experiences while commanding a Light Aircraft Maintenance Company in Korea this past year. It appeared obvious that too many aircraft were in our shops for maintenance. Upon close observation, we discovered that preventive maintenance was sadly neglected.

LACK OF SIMPLE PREVENTIVE MAINTENANCE

In spite of the fact that all Corps, Divisions, and Units equipped with aircraft are supplied with trained personnel and tools to perform minor maintenance, some simple 1st-echelon maintenance discrepancies were discovered, such as:

Aircraft improperly moored; which in the high winds—so common in Korea—could tear a wing, strain the landing gear, or twist the fuselage.

Brakes not checked to insure that all brake clips are in place. A landing with this aircraft could possibly result in a total wreck and serious injury.

Oil cap not replaced properly; which inevitably results in the loss of oil while airborne, and a possible loss of the engine.

Tires improperly inflated, could cause a ground loop while taxiing.

Air filter not clean, creates an overheated engine.

Safety wires on bolts missing. These are required everywhere on the aircraft where bolts may vibrate loose.

Mind you: All these simple first- and second-echelon jobs were being neglected, **and believe it or not, they were the cause of 50% of the major maintenance jobs at our company—to say nothing of the total wrecks and lost lives.**

LACK OF CAUTION

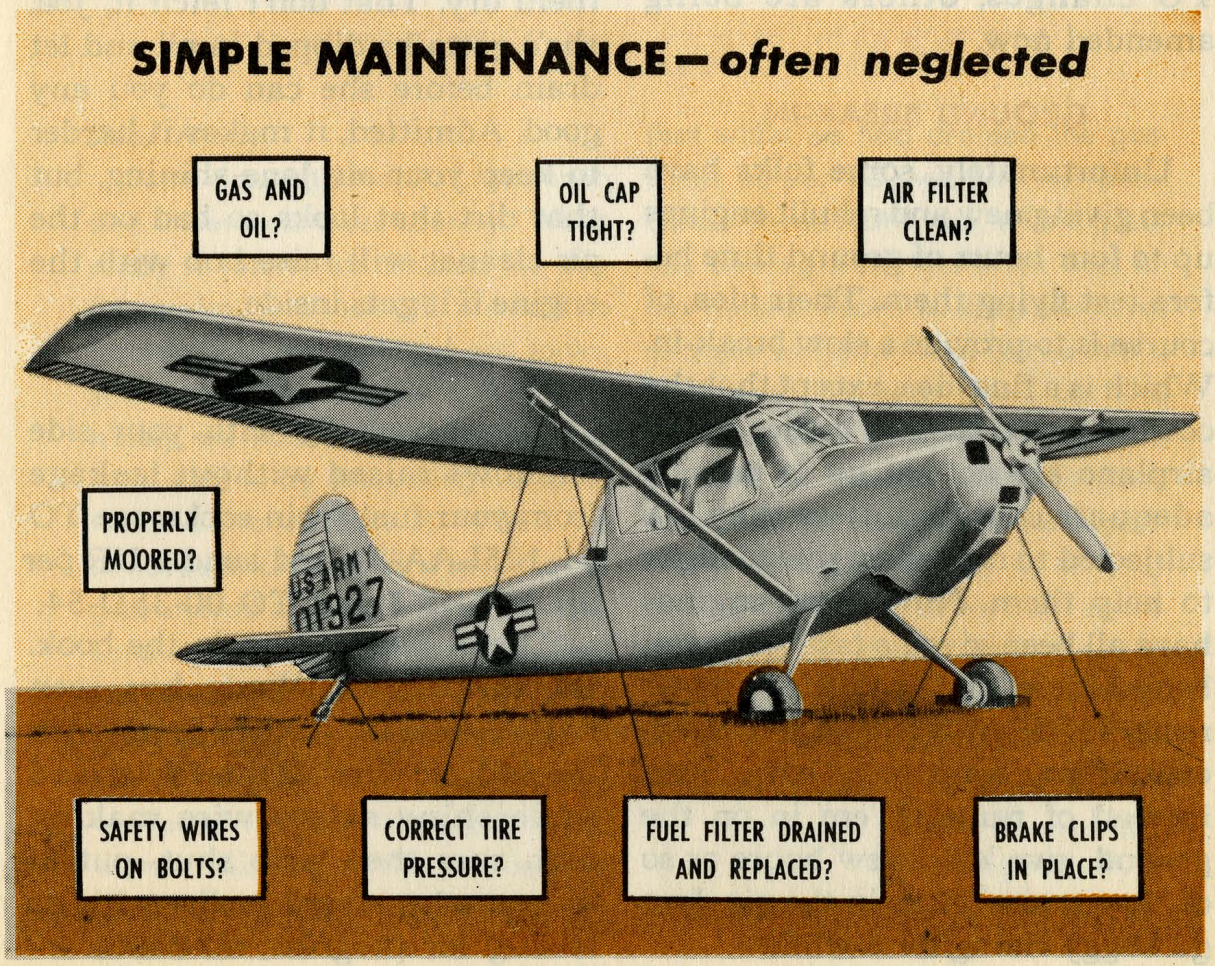
I have faith in the line chiefs and mechanics, but somehow, I enjoy ease-of-mind when I make my own preflight check on the aircraft. On occasion, I have seen a "Hot Pilot" jump in his ship, run it up, and then yell to the line chief, "Is everything OK?" The line chief, being busy at the time, may give his OK—and recall, after the ship is airborne, that something serious was wrong.

I wish I had the opportunity to take pictures of the results of carelessness with aircraft. Just picture a man pulling through a ship with no one in the cockpit and no chocks under the wheels. The engine catches, and the man winds up flat on his back with a wild aircraft careening around the area creating havoc.

Or a color picture of the man who backed into the propellor while checking a running engine. Quite messy.

I could go on forever. **Why men get careless when they handle aircraft I will never understand. We can never stress enough the importance of safety precautions and preventive maintenance.**

Capt H. M. Luckfield
Korea



Windy's Windstorms

WINDS ALOFT

Sgt Windsock, as his name implies, spreads the word as to which way the winds are blowing. Here are some items that are in the wind, some are already covered by TO changes, others are being amended now.

GROUND BREAK-IN

Unfortunately, some folks have been giving new and rebuilt engines up to four hours of ground time before test flying them. Their idea, of course is to provide a slow break-in. Which is a fine idea, except that the cowlings and cooling baffles on an airplane are not set up to provide adequate cooling unless they are subjected to ram effect due to flight to help them. Now these engines have all been given a test block run before issue, and they are actually ready for flight when issued. However, if you want to be extra sure, instead of running 'em in on the ground, give 'em a few hours or so of "low cruise" time in the air. Just go buggy riding for a while.

THE OILY BOID GETS IT

The "Boid" in this case is the filter element in your carburetor air cleaner. It seems a distressing number of people are washing these filters out in solvent and replacing them dry. That don't fetch it, Joe, she's gotta be dipped in oil and let drain before she can do you any good. Admitted, it makes it harder to keep your airplane shining, but that dirt that looks so bad on the air cleaner will raise hob with the engine if it gets inside.

L-19A FUEL VALVE

If you can't fly with your side windows raised without leakage from your fuel drain cocks, see TO 01-125LAA-21 and send a UR per SR 700-45-5 and TO 00-35D-54.

That's what it says in the book. Off the record, Windy **has** seen L-19A's and LC-126C's flying with the old tie-wire drain cocks, and some shiny safety wire making darn sure they were shut—put in by some backward realist with no feeling for progress, no doubt.

L-19 BRAKE LOCK

It is now lawful, and recommended, if your L-19 has the T-handle brake lock, that you take the two springs (P/N 0660256), the four shackles (P/N AN 115-2), the two pins (P/N AN 392-11), and the two pins (P/N AN 380-2-2) out of the rudder-pedal installation. This removes the brake locking function of the control lock. It appears that the dual brake locking system was confusing people and resulting in bent brake-pedal arms. This dual locking system has been eliminated on later ships.

BELL CRANK CHECK

Checking the rudder bell-crank assembly for cracks, bends, tightness and so on will be done at the intermediate inspection in the future. TO 01-125LA-6 will say so. Meantime, go look at yours, and sorta keep an eye on it.

L-19 NOSE COWLING

If Betsy is flying around with a busted nose, cracked nose-cowling that is, you can stop-drill the cracks and install a doubler. Pictures on this will be along later, common sense should do you for now.

WATCH THAT GAS CHECK!

Dear Windy,

Some time ago Maj P. L. Strennen and I were on cross country. When ready to return, we checked the ship for service, and took off. We had no trouble until we switched gas tanks, whereupon the engine quit. Fortunately we had ample altitude, and were able to try everything we could think of to restart it. When we switched back to our first tank the engine started and ran with no trouble. Landing at the nearest available field we found that we had water in the gasoline. The fuel-filter bowl was of course full, but in draining the tank we found it about two-thirds full of water. Thinking back, we decided that while we had drained the gascocks as per TO, we had not been careful to see that it was, in fact, gasoline flowing from them. We had let our natural desire to keep ourselves and our uniforms clean get us into a bad spot. (We later found out that the next plane to leave this field had crashed on take-off from the same cause.) So, in the light of this experience, we urge everyone to not only drain a little gasoline from the draincocks, but to actually feel it, look at it and smell it to be sure it **is** gasoline. Particularly when using colorless fuel.

Maj M. C. Light
Washington, D. C.

SUPPLY & DIRECTIVES

NEW UER FORM 468

Here's a shot in the arm for ailing trucks, tanks, or what have you got that you don't quite like and wish you had the guy who built it by the short scruff. Now is your chance, like never before, to talk direct into the home-office ear and get action you never dreamed of.

THE Tech Services are your devoted slave, and if you only knew it, they crave to fill your front-line prescriptions with equipment that's just like you'd have built it yourself if you'd only had half a chance.

Here's your chance.

This is the new UER form for reporting defects and deficiencies. It serves the Chief of Ordnance like a hospital chart serves the Medic on his rounds. You got a gun with a fractured whing-ding? Write home about it. Your windshields keep coming through with no glass in 'em? Lose no time biting your nails, when you can bite a pencil point instead and tell the UER all about it.

They keep sending you crutches when the stock number calls for splints? Posthaste the home office their two copies of Everyman's Gripe Sheet and see how fast you start getting splints.

Believe PS, brother, it works.

They're listening for your needs back at the Pentagon, but you're the boy that's got to holler if you want help.

Report only one deficiency to a form. Start with the instructions at the top of the front page and work down, give full information, but skip the sections that don't fit your problem. (And if some of the terms sound vague, it's because the form's used for equipment supplied by all tech services.)

This is to identify the vehicle of which the defective item is a part. If there's more than one vehicle involved, list them, too. You can use the space on the back marked "Remarks". Normally you'll want to give the USA number, serial number, date of delivery, time in use and mileage for each vehicle—unless there's too many of them, then just the USA number and contract number will do.

Fill in **only** if the defective part was originally a part of the vehicle—if it was actually on the vehicle at the time of delivery.

Fill in **only** if the defective part was **not** part of the vehicle originally, such as replacement parts like a new windshield to replace a broken one.

Put in the complete history of the trouble. No need to be bashful here.

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UNSATISFACTORY EQUIPMENT REPORT (SR 700-45-5)

DO NOT FILL IN THE TWO SPACES BELOW — DATE — REPORT NUMBER

REPORTS CONTROL SYMBOL CSGLD-247

INSTRUCTIONS – Although this form should be as complete as possible, ... should be made to fill in all boxes nor the sections which are not applicable. Photographs and/or sketches should be forwarded with this report whenever they add to the description of the difficulty.

Chief of any unit, office, or agency.

TO: OCO Washington 25, D.C.

FROM: (Organization and Station): Post Ordnance Section, Third Army AAA Training Center, Camp Stewart, Georgia

ORIGINATING OFFICER: P. W. Jackson, Maj Ord Corps

STATION REPORT NUMBER: 346

DATE: 16 Sept 52

DESCRIPTION OF DEFECTIVE ITEM

NOMENCLATURE OF DEFECTIVE ITEM: Seal, oil output

PART NUMBER: 20042

STOCK NUMBER: 6749-74-11263

SERIAL NUMBER: 39661253

MANUFACTURER: Timken

MODEL: 67KA

FILL IN IF DEFECTIVE ITEM IS PART OF A MAJOR ITEM

NOMENCLATURE OF MAJOR ITEM: Truck, Cargo, 2½-ton, 6x6, M135

MANUFACTURER: General Motors Corporation

MODEL:

FILL IN IF DEFECTIVE ITEM WAS ORIGINALLY ON MAJOR ITEM

REGISTRATION NUMBER OF MAJOR ITEM	SERIAL NUMBER	CONTRACT NUMBER	DATE OF DELIVERY
4110659441	1139774	DA 30-069 - ORD-908	22 Aug 52

CONTRA

FILL IN IF DEFECTIVE ITEM WAS NOT ORIGINALLY ON MAJOR ITEM

CONTRACT NUMBER	DATE OF DELIVERY	REQUISITION NUMBER	SHIPPING ORDER NUMBER
DA 30-069-ORD-908	22 Aug 52	32447	WOD 6691321

PURCHA

PURCHASE ORDER NUMBER	LOT OR BATCH NUMBER
18-110-931	10

DEFICIENCY DATA ON DEFECTIVE ITEM

NUMBER OF ITEMS NOW DEFECTIVE	TOTAL NUMBER ON HAND	ITEMS ON	TOTAL NUMBER OF PRIOR FAILURES	DATE OF FIRST FAILURE
2	633		6	20 Aug 52

TOTAL TIME INSTALLED	TOTAL TIME IN USE	HOURS RUN
0	1 mo.	

ROUNDS FIRED	DATE OF LAST REBUILD	
0		

Contract numbers are especially important. Be sure to include them.

PRESENT LOCATION OF DEFECTIVE ITEM OR DISPOSITION THEREOF: Replaced and discarded

DESCRIPTION OF DIFFICULTY AND PROBABLE CAUSE (Continued on reverse side): Neoprene type seal was leaking badly upon arrival at this station.

Note: Vehicle part used only as example — form is for all equipment.

DA FORM 1 MAR 52 468 REPLACES DA AGO FORM 468, 1 AUG 49, WHICH IS OBSOLETE.

Sure cure for backaches and pains in the neck

UNSATISFACTORY EQUIPMENT REPORT
(SR 700-45-5)

DO NOT FILL IN THE TWO SPACES BELOW		REPORTS CONTROL SYMBOL CSGLD-247
DATE	REPORT NUMBER	

INSTRUCTIONS - Although this form should be as complete as possible, [illegible] should be made to fill in all boxes nor the sections which are not applicable. Photographs and/or sketches should be forwarded with this report whenever they add to the description of the difficulty.

Chief of **any** unit, office, or agency.

TO:
OCO
Washington 25, D.C.

FROM: *(Organization and Station)*	ORIGINATING OFFICER	STATION REPORT NUMBER
Post Ordnance Section Third Army AAA Training Center Camp Stewart, Georgia	P. W. Jackson Maj Ord Corps	346 DATE: 16 Sept 52

DESCRIPTION OF DEFECTIVE ITEM

NOMENCLATURE OF DEFECTIVE ITEM		PART NUMBER
Seal, oil output		20042
STOCK NUMBER: G749-74-11263	SERIAL NUMBER: 39661253	
MANUFACTURER: Timken		MODEL: 67KA

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NOMENCLATURE OF MAJOR ITEM	
Truck, Cargo, 2½-ton, 6x6, M135	
MANUFACTURER: General Motors Corporation	MODEL:

FILL IN IF DEFECTIVE ITEM WAS ORIGINALLY ON MAJOR ITEM

REGISTRATION NUMBER OF MAJOR ITEM	SERIAL NUMBER	CONTRACT NUMBER	DATE OF DELIVERY
4106594	1139774	DA 30-069 - ORD-908	22 Aug 52

CONTRA

FILL IN IF DEFECTIVE ITE[illegible] AS NOT ORIGINALLY ON MAJOR ITEM

CONTRACT NUMBER	DATE OF DELIVERY	REQUISITION NUMBER	SHIPPING ORDER NUMBER
DA 30-069-ORD-908	22 Aug 52	32447	WOD 6691321
PURCHASE ORDER NUMBER: 18-110-931		LOT OR BATCH NUMBER: 10	

PURCHA

CIENCY DATA ON [illegible]ECTIVE ITEM

NUMBER OF ITEMS NOW DEFECTIVE	TOTAL NUM[illegible] HAND / ITEMS ON	TOTAL NUMBER OF PRIOR [illegible]AILURES	DATE OF FIRST FAILURE
2	633	6	20 Aug 52
TOTAL TIME INSTALLED: 0	TOTAL TIME IN USE: 1 mo.		HOURS RUN
ROUNDS FIRED: 0	DATE OF LAST REBUILD		

Contract numbers are especially important. Be sure to include them.

PRESENT LOCATION OF DEFECTIVE ITEM OR DISPOSITION THEREOF

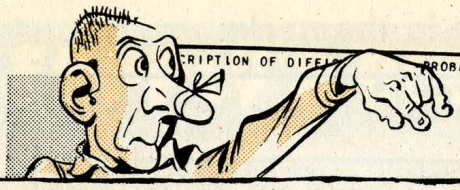
Replaced and discarded

DESCRIPTION OF DIFFICULTY AND PROBABLE CAUSE *(Continued on reverse side)*

Neoprene type seal was leaking badly upon arrival at this station.

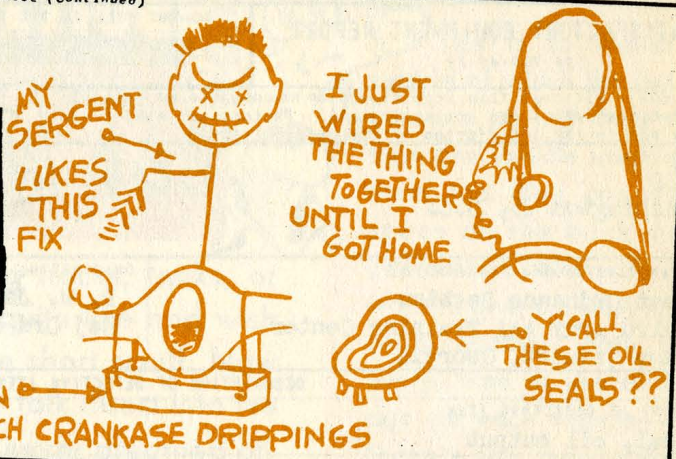
Note: Vehicle part used only as example — form is for all equipment.

DA FORM 1 MAR 52 468 REPLACES DA AGO FORM 468, 1 AUG 49, WHICH IS OBSOLETE.



CRIPTION OF DIFFI... PROBABLE CAUSE (Continued)

If the TM's on the vehicle have any illustrations or diagrams showing the part in question, refer to the page numbers. Or send pictures and drawings of your own.

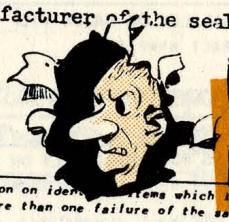


ION TAKEN (Include all higher commands, other offices, and commercial concerns which have been notified of this ficiency, and include any known action taken by these to correct the deficiency or to replace the defective item items)

No seals were available at this time and the old type GMC, 6 x 6, Banjo type transfer case oil seal, Ord. Part #H013-05-00118, was installed in their place. This leather type seal stopped the leak completely. General Motors sent springs of a heavier type to install in the seal but this did not completely stop the leak.

RECOMM... NS

That the manufacturer of the seal perfect and install a seal that will do the job.



Suggestions for keeping the same thing from happening in the future—or whatever else you have to say.

KS (Include all information on iden... items which is different from that on the reported item, such as serial number, ract number, etc., when more than one failure of the same nature has occured)

Other vehicles:

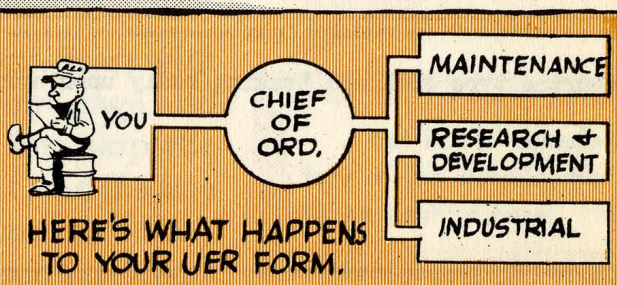
USA	Serial #	Date of del.
41069763	1139775	22 Aug 52

TELL A GOOD CLEAR STORY —YOUR FIX MAY BE JUST THE THING THEY'RE WAITING FOR.

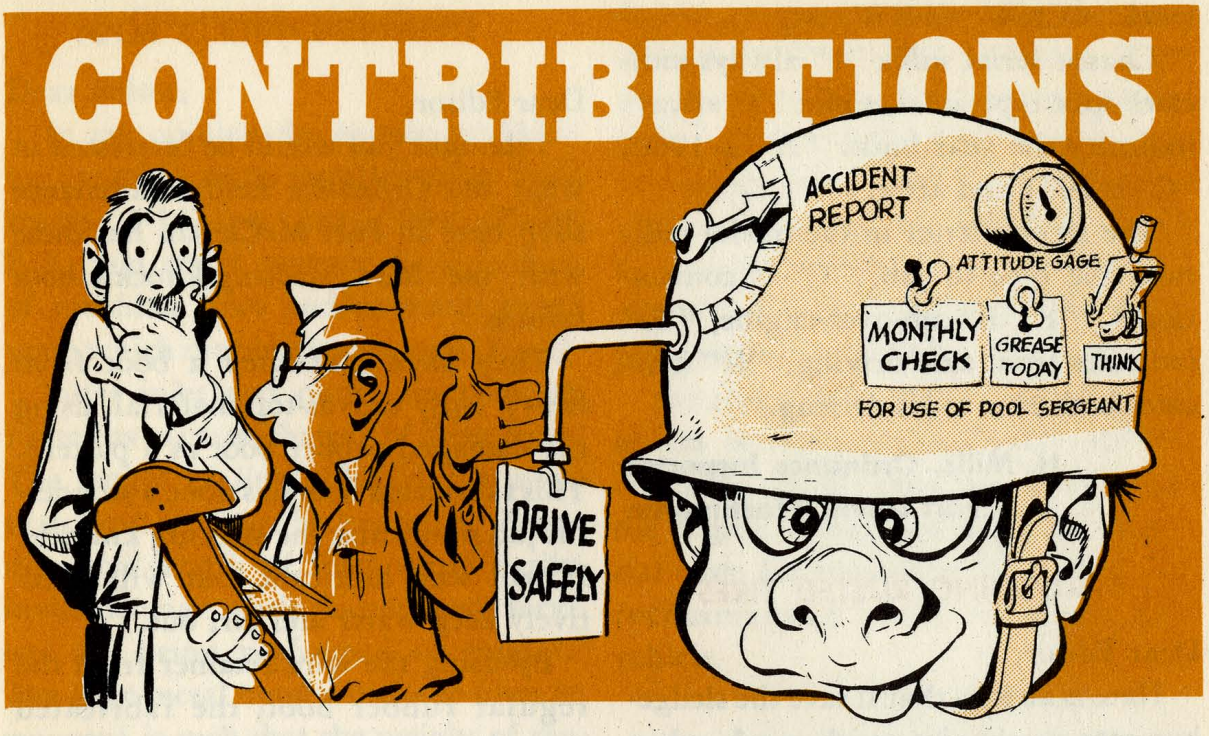
List additional vehicles having the same deficiency—and here too you're invited to make any other remarks you may have on the subject.

*U. S. GOVERNMENT PRINTING OFFICE : 1952 O - 993596

Time is the essence of the UER—to do the most good send the forms direct to the Chief's office—no channels needed here. See SR 700-45-5. (Subject as usual to local overseas ground rules.)



CONTRIBUTIONS



HOOKUP MIXUP

Dear Editor,

When the 1-1/2-ton trailer, 2-wheel, M104 is connected to the 2-1/2-ton M135, GMC, the right-hand blackout-marker on the trailer will not light.

A separate wire is provided for each blackout marker-light on the M104. Each wire is terminated at a separate pin in the plug for connection to the trailer receptacle on the truck. The truck's wire (wire marked #24) for the trailer blackout-lights should divide and connect to both "A" and "C" terminals. "A" should lead to the left and "C" to the right blackout-markers so both receive current (see TM 9-819 on the 2-1/2-ton M34's).

But in checking with TM 9-819A (the M135 Manual) Fig. 90 shows that "C" connection has been omitted from the diagram, and wire #24 is not divided. On a trailer connected to the M135 the right blackout-marker will not light until a jumper is connected from "A" to "C".

You can make your own light connection as follows: Get a short length of #14 P&G gage rubber-covered stranded-copper-wire (similar to wire used on truck) and solder it in terminal "C" of receptacle on truck. Splice the other end of this wire to wire #24 on the truck. Solder this wire carefully, seal with rubber tape, and give it a protective cover with friction tape.

E. M. Hinsdale, OCT*
Camp Stewart, Georgia

*Ordnance Corps Technician

GMC SYMBOLS

Dear Editor,

For the benefit of Sgt K.L.H., Korea (PS Magazine, November) and any others who may be interested, the following may be of help in figuring out the meaning of the symbols on the GMC

truck: CCKW, CFKW, etc.

Chassis serial suffix "1" always indicates split type axles, suffix "2" always indicates the year built. "A" is 1940, "C" is 1941 and after.

The second letter in the model indicates the type of cab. "C" is conventional, "F" is cab-over-engine, "K" indicates front axle driving, "W" indicates both rear axles driving.

H. Mills, Ordnance Inspector
Fort Lewis, Washington

DISLODGING RUSTED TIRES

Dear Editor,

Here is an idea that'll save the sledge-hammer mechanics much work when breaking loose a tire which has rusted to the rim. By using the weight of the truck, the tire will break loose.

WOJG John Maguire
NGUS-Chicago

(Ed. Note—If you're wondering what's holding up the truck while the jack breaks the rim loose, remember that where a flat's usually fixed there's no jack shortage.)

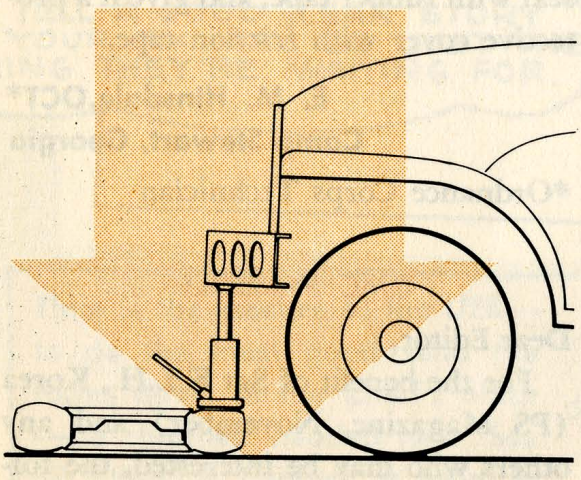


Fig. 1—Place tire on solid ground, jack on tire and in line with bumper, and "jack-away."

STEERING-KNUCKLE BOOT

Dear Editor,

I thought you would be interested in what the Ordnance field-maintenance shop here in Fort McClellan has done with the M34 steering-knuckle-boot failure.

They have fabricated a boot from heavy 3-ply canvas-top material, using the damaged rubber boot as a pattern. This fabricated boot has done a wonderful job protecting the steering knuckle. It will seep lubricant, but will effectively keep water and dirt out.

By using the wire retainer from the regular rubber boot, the fabricated boot, is very easily installed and will stay in place.

J. H. Fuller, OCT
Fort McClellan, Alabama

(Ed Note—Sure, why not? But before making yourself unnecessary work, try drawing Kit, Steering Knuckle Boot, G742-7410883 from your supply channels—the latest beer-buzz says they have 'em.)

SEALING COMPOUND

Dear Editor,

In your October issue, Number 5, p. 187, article entitled "Wide Open Spaces"; Sealer, Synthetic Rubber, Stock Number 7300-828075 is a good Air Force number. Army synthetic rubber sealer is Compound, Sealing, (synthetic rubber adhesive) #52-C3257-50.

W. Russell
Camp Drum, New York

(Ed Note—You are so right.)

OIL FILTER TROUBLE

Dear Editor,

In my opinion the engine oil filters are unsatisfactorily installed on the Ford trucks, 1-1/2-ton, 4x2, CS&P, Model F5R; and could perhaps cause failure of the filter lines and/or metal panel upon which the filter is mounted (Fig 2).

Filter inlet and outlet lines are so routed as to cause chafing of these lines. The length of lines (flexible) is such that short life can be expected. Location and length of lines could easily invite damage while maintenance services are being performed on engine. The gage metal upon which the filter is mounted is such that the weight of the filter is liable to cause metal fatigue and result in cracking of the metal around the filter mounting bracket.

I'd suggest that a filter mounting bracket be fabricated and mounted as indicated (Fig. 3), that the fabricated bracket be installed on the cylinder head, utilizing the drilled and tapped bosses provided and used for this purpose by the Ford Motor Company when installing standard-equipment filters. Both inlet and outlet lines used in connecting the filter should be of the same type as those used by the Ford Motor Company when standard-equipment filters are installed—the steel type, Ford part number 11A18667.

Installing these filters should result in less maintenance costs, and will interfere in no way with the servicing of the engine. Estimated labor and material costs for relocating these filters as recommended above is $8.66 per vehicle.

F. L. Gibson, OCT
Camp Cooke, California

(Ed Note—From the illustrations it looks like the filter was sitting right smack on one of the sparkplugs. But actually, the filter is placed **between** *sparkplugs; and adequate room has been left for servicing.)*

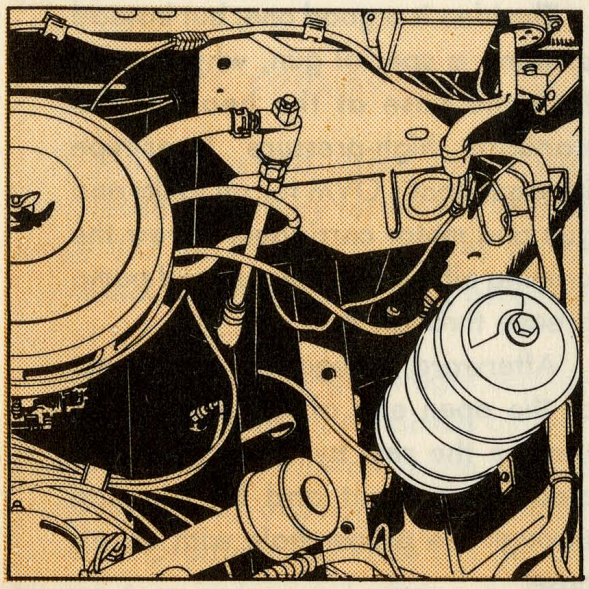


Fig. 2—With oil filter so installed, location and length of lines makes servicing difficult.

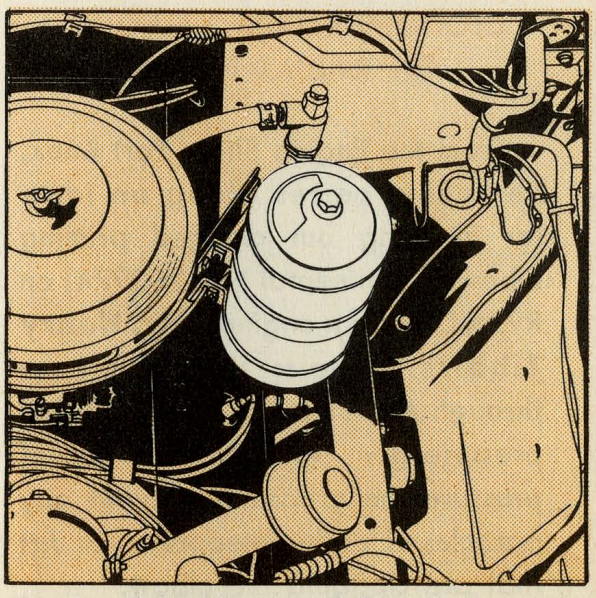


Fig. 3— Repositioning oil filter in this way, cuts maintenance and facilitates servicing.

EASY NUT REMOVER

Dear Editor,

Here's a little helper I use when removing the engine assembly from the 5-ton 4x2 tractor truck (C.O.E.), Model H-542-11. I always had trouble with the studs at the bottom of the clutch housing when doing that job. There's just too little room between the cross member and the transmission flange for turning the nuts from those studs.

I found that by bending an open end wrench about 30° I could "get around the corner" at those nuts much better.

Sgt R. A. Fritz
APO 742, New York

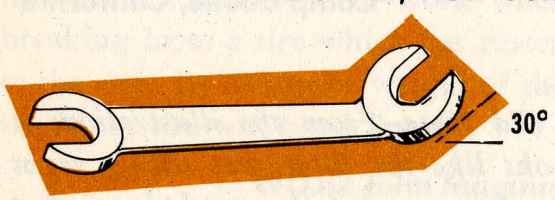


Fig. 4 —This tool eases engine-assembly removal on tractor-truck (Model H-542-211).

COLD WEATHER START

Dear Editor:

Operating up where it's cold, this little trick may help someone who has flooded his engine while trying to start it.

Be sure the vehicle is in neutral, turn the ignition on, and remove the distributor cap. Turning the cap over, you can use a coin or washer as a jumper from the center or coil-wire electrode to any one of the edge or spark-plug-wire electrodes. If you then wiggle the points, a spark will occur in that particular cylinder. Do this to all the cylinders in turn, and they will be fired and cleaned of excess gasoline.

The point is that you can get a lot hotter spark by this method than by using the starter, since there's no starting drain on the battery.

Maj. G. F. Clyde
APG, Maryland

CLOGGED PRIMING ELBOWS —ON RADIAL ENGINES

From the Engine Shop, Fort Knox, Kentucky, comes along an idea for cleaning out clogged priming elbows (Continental No. 200974) on R975-C1 radial engines. **Mr. Henry Tibbits** suggests forcing grease through the elbow with a portable pressure gun. At about 600 lbs. of pressure the grease forces out any particles of leather, neoprene, or dirt that are clogging the elbow.

The idea is a good one, but instead of using a special gun, why not detach the hose at the head of the standard high-pressure lever-type lube gun that's OVM for all tanks and gun and motor carriages? Screw the priming elbow into the gun and pump grease through it.

Afterward, gouge the grease out of the open end of the elbow, and remove the rest by flushing in dry-cleaning solvent and by blowing through the primer hole with an air hose.

Connie Rodd's BRIEFS

Colored GAA

Did you know that all greases under Spec MIL-G-10924 (ORD) are compatible with each other? They are. The colors may range from light yellow to dark green, and may streak when they're mixed, but you can use them together.

But these greases may or may not be compatible with the lubricant the manufacturers use to pack wheel bearings of new vehicles. Which means that new vehicles received with too little grease in the wheel bearings may need a clean-and-repack job. See your local expert.

You confused?

If you're puzzled about what's with the grease on battery terminals, look at page 247 of PS No. 6. It tells about Tempseal for terminals being escorted out of the picture.

New vehicles now get a light coat of grease on the battery terminals as protection against corrosion (from spilled electrolyte, etc.), and not as an insulation or water-proofing. So keep the grease on the terminals—and after a battery cleaning, give the terminals a new coat of grease. Use a grease with a high-melting point, so it'll stay on through heat or cold.

Don't lose the key

According to MWO ORD C66-W3, locking the screws that hold the breech-ring key to the breech ring on the 75-MM gun, M6, is a must. This you do by requisitioning two new screws (Part No. 7305538, Stock No. CO66-7305538) and two cotter pins (Part No. 501000, Stock No. H001-0811261). The old screws go to Ordnance maintenance for modification into the new type.

Dry-cell batteries

Those small batteries used in night-lighting devices often fizzle out at –20° F. But, if you'll tuck them away in an inside pocket to give them body warmth when they're not in use, they'll be charged for action when needed.

Keeping the batteries outside the instruments when you're not using them isn't a bad idea even in warmer weather. The chemical action set up in an exhausted battery can damage the battery tube. Pastes of chloride of zinc and ammonia are forced out of the battery and will corrode the metal they touch.

SOUND OFF

UNSATISFACTORY EQUIPMENT REPORT
(SR 700-45-5)

DO NOT FILL IN THE TWO SPACES BELOW

DATE | REPORT NUMBER

REPORTS CONTROL SYMBOL CSGLD-247

INSTRUCTIONS - Although this form should be as complete as possible, no attempt should be made to fill in all boxes nor the sections which are not applicable. Photographs and/or sketches should be forwarded with this report whenever they add to the description of the difficulty.

TO:

FROM: (Organization and Station)

ORIGINATING OFFICER

STATION REPORT NUMBER

DATE

DESCRIPTION OF DEFECTIVE ITEM

NOMENCLATURE OF DEFECTIVE ITEM

PART NUMBER

STOCK NUMBER

SERIAL

MANUFACTURER

FILL IN IF DEFECTIVE ITEM I

NOMENCLATURE OF MAJOR ITEM

MANUFACTURER

FILL IN IF DEFECTIVE ITEM

REGISTRATION NUMBER OF MAJOR ITEM

SERIAL NUMBER

FILL IN IF DEFECTIVE I

CONTRACT NUMBER

DATE OF DELIVERY

PURCHASE ORDER NUMBER

DEFICIENCY DA. A O

NUMBER OF ITEMS NOW DEFECTIVE

TOTAL NUMBER OF ITEMS ON HAND

TOTAL TIME INSTALLED

TOTAL TIME IN USE

ROUNDS FIRED

DATE OF LAST REBUILD

DEPOT W... OH

PRESENT LOCATION OF DEFECTIVE ITEM OR DISPOSITION THEREOF

DESCRIPTION OF DIFFICULTY AND PROBABLE CAUSE (Continued on reverse side)

DA FORM 1 MAR 52 468

... 468, ...

THE SHORTEST DISTANCE BETWEEN YOU AND THE MEN WHO MAKE THE EQUIPMENT YOU USE IS FORM DA 468 FILL IT OUT GET IT IN IT'S LOUDER THAN YOU THINK